

**Annex 1**

**LOCALIZED EFFECTS ASSESSMENT DOCUMENTATION RECORD (LEADR)**

This completed form must be uploaded to the Referral Action Log of PATH.

**Section 1. Project Description:**

<b>Project Name :</b>	Trans Mountain Expansion Project Westridge Marine Terminal
<b>Name of the waterbody :</b>	Burrard Inlet
<b>PATH #</b>	17-HPAC-00071
<b>Name of the nearest location :</b>	Burnaby, British Columbia 49°07'22.15" N and 122°57'16.09" W
<b>Water body Types(s) :</b>	<input type="checkbox"/> Freshwater <input checked="" type="checkbox"/> Marine <input type="checkbox"/> Estuarine
<b>Proponent :</b>	Trans Mountain Pipeline ULC. 2700, 300 – 5 Avenue SW Calgary, AB T2P 5J2 403-514-6427
<b>Reg. Review Unit :</b>	Oil and Gas
<b>Form prepared by :</b>	Elly Chmelnitsky

**1 a) Briefly describe the project**

Trans Mountain Pipeline ULC (Trans Mountain) is proposing to expand its existing 1,150 km pipeline system between Edmonton, Alberta and Burnaby, British Columbia which includes modification and expansion of the existing Westridge Marine Terminal (the Terminal) in the central harbour of Burrard Inlet in Burnaby, BC.

Works, undertakings or activities involved in the construction of the Terminal expansion include:

- Installation of a bulkhead wall, including excavation of existing shoreline riprap, circular sheet pile cell installation, and infilling the shoreline area (foreshore) to accommodate new onshore infrastructure;
- Installation of piles for construction of three new loading berths and a utility dock off the expanded foreshore area;
- Placement of concrete anchor block to secure containment booms; and
- Decommissioning and removal of an existing small utility dock.

See Appendix A, Figure 1 for a diagram of Project components.

**1 b) Identify and briefly describe all component of works, undertakings or activities (WUA) that have the potential to affect fish and/or fish habitats or aquatic species at risk.**

Code	Name	<i>Brief description</i>
WUA #1	Bulkhead Wall Installation	The general sequence of installation of the bulkhead wall involves excavation of riprap along the existing foreshore, installation of circular sheet pile cells to form the bulkhead wall, and infilling within the sheet pile cells and behind the sheet pile wall to create the foreshore expansion.

		<p>The total footprint of these works is 6007 m<sup>2</sup> (4,413 m<sup>2</sup> intertidal; 1,594 m<sup>2</sup> subtidal); see Appendix A, Figure 2 for a description of the construction footprint effects on fish habitat. Each construction sequencing stage is described below.</p> <p><i>Riprap Excavation</i></p> <p>Intertidal and subtidal rocky substrate (predominantly riprap) over the entire footprint will be excavated from the foreshore extension and infilling area. Approximately 24,000 m<sup>3</sup> of rock will be excavated. The seaward half will be excavated from a marine crane using an orange peel grab. The landward section will be excavated from shore using an excavator.</p> <p>Riparian vegetation on the landward side of the riprap will be removed (2 to 4 m along the shoreline; 3,050 m<sup>2</sup> total footprint).</p> <p><i>Sheet Pile Wall Installation</i></p> <p>An approximately 363 m long bulkhead wall comprised of 11 circular sheet pile cells and 10 connector sheet-pile cells, will be installed to contain the infilling using a barge-based crane and vibratory hammer.</p> <p><i>Infilling</i></p> <p>Within each sheet pile cell, material will be excavated and then cells will be backfilled with new material from a barge and conveyor. Infilling will also be completed between the existing shoreline and bulkhead wall. Footprint = 5,462 m<sup>2</sup> (4,196 m<sup>2</sup> intertidal; 1,266 m<sup>2</sup> subtidal).</p>
<b>WUA #2</b>	Pile Installation	<p>Footprint (trestle and berth piles) = 455 m<sup>2</sup> subtidal</p> <p>Fifty-one 1,372 mm outer diameter steel pipe piles are included in the construction of the access trestle (18 piles), three junction platforms (23 piles), utility dock (6 piles), and firewater pump house (4 piles). Vibratory methods can be used to set piles to 10-21 m above tip then a diesel impact hammer will be used to set the piles to design depth.</p> <p>Installation of 48 mooring dolphin piles (1,829 mm diameter) and 48 berthing dolphin piles (2,286 mm diameter) will require a hydraulic impact hammer although piles may advance up to 25 m under their own weight prior to impact hammering.</p> <p>Thirty-eight 1,372 mm piles are required to support the loading platforms and will also be driven with a hydraulic impact hammer. See Appendix A, Figure 2 for the location and footprint effects of pile installation on fish habitat.</p>

WUA #3	Anchor Block Placement	Nine 1.22 x 0.61 m concrete anchor blocks will be permanently placed on the sea floor around the berthing areas to secure the containment booms. Total footprint = 7 m <sup>2</sup> subtidal
SA #1 (self-assessed)	Utility Dock Removal	A small utility dock (approximately 70 x 13 m = 910 m <sup>2</sup> ) will be removed. Its superstructure will be dismantled and placed on a barge for removal. The existing support piles will be secured with a steel choker and extracted using a derrick crane or a vibratory hammer.  <i>The Proponent has not provided adequate information to conduct a review of this WUA. It is assumed that this WUA has been self-assessed by the Proponent as impacts are not likely from removal of the dock with the mitigation measures described in the Proponent's application. This WUA is therefore not carried forward in the effects assessment.</i>

## Section 2. Fish Species Present and Habitat Description

### 2 a) Species

Code or name of the WUA	Species likely to be affected by the proposed WUA
WUA#1 Bulkhead Wall Installation	Fish species: Pacific salmon (sockeye, chum, coho, pink, and Chinook), Pacific herring, gunnels, sculpins, surf smelt, anchovy, and eulachon. Pricklebacks and flatfish (likely includes English sole, rock sole, and starry flounder). Surfperch including shiner perch, pile perch, kelp perch, and striped perch. Rockfish (likely including copper and quillback), kelp greenling, and lingcod.  Invertebrate species: Intertidal - 17 species observed including periwinkles, limpets, common acorn barnacles, and blue mussels. Subtidal - 23 species observed including eight arthropods, seven echinoderms, four cnidarians, three molluscs, and one tunicate. Dominant species include orange sea pens, giant plumose anemones, ochre stars, and Dungeness crabs. Red rock crab, shrimp (coonstripe shrimp), and prawns.  Marine Mammal species: harbour seals (most abundant), occasional sightings of Steller sea lions, harbour porpoise, and Southern resident and Transient (Bigg's) killer whales, and rare sightings of California sea lions, false killer whales, grey whales, humpback whales, minke whales, Northern elephant seals, Northern fur seals, and Pacific white-sided dolphins.
WUA #2 Pile Installation WUA #3 Anchor Block Placement	Fish species: Pricklebacks and flatfish (likely includes English sole, rock sole, and starry flounder). Pacific salmon (sockeye, chum, coho, pink, and Chinook), Pacific herring, anchovy, and eulachon.  Invertebrate species (subtidal): 23 species observed including eight arthropods, seven echinoderms, four cnidarians, three molluscs, and one tunicate. Dominant species include orange sea pens, giant plumose anemones, and ochre stars. Dominant species include orange sea pens, giant plumose anemones, ochre stars, and Dungeness crabs. Red rock crab, shrimp

	(coonstripe shrimp), and prawns.  Marine Mammal species: harbour seals (most abundant), occasional sightings of Steller sea lions, harbour porpoise, and Southern resident and Transient (Bigg's) killer whales and rare sightings of California sea lions, false killer whales, grey whales, humpback whales, minke whales, Northern elephant seals, Northern fur seals, and Pacific white-sided dolphins.
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## 2 b) Habitat description

Code or name of the WUA	Habitat likely to be affected by the proposed WUA
<b>WUA #1 Bulkhead Wall Installation</b>	<p><b>Intertidal habitat:</b> This habitat has a moderate to high slope (14- 60%) with predominately coarse substrate including boulder, cobble, and riprap containing algae and grasses. Small areas of sand and gravel. Eight algal taxa have been observed; the predominant species are rockweed and sea lettuce.</p> <p>Almost half of the 2.34 km shoreline (1.04 km or 44.5%) is "man-made". Sand flat and mud flat cover 30.1% and 25.4% of the total shoreline, respectively.</p> <p>The riparian vegetation in the project area being removed is mostly disturbed and therefore, may provide limited ecological function. The vegetation is made up of 38 vascular plant species, typical of an early successional community (e.g., red alder and herbaceous shrubs). Predominant vegetation includes blackberry, asters, ferns, peas, grasses, and horsetails. Overhanging branches and tall trees are lacking.</p> <p>In the high intertidal, just west of the existing tanker berth, the predominant species are rockweed, Turkish washcloth, and green ribbon.</p> <p>Intertidal rocky habitat with algae and grass provide refuge from predators, foraging, and spawning areas. A Rockfish Conservation Area overlaps with the project area.</p> <p>A variety of finfish and invertebrates use the intertidal zone during at least one of their life stages. The intertidal habitat provides refuge, rearing, migration, foraging, and spawning areas including for Pacific salmon, Pacific herring, and Dungeness crab. Twelve salmon bearing streams and rivers supporting all five species of Pacific salmon drain into Burrard Inlet in and around the project area.</p> <p><b>Subtidal habitat:</b> Subtidal habitat is dominated by soft substrates (e.g., silt, sand, and mud) with traces of broken shells and organic debris. Shallow areas to the east and west of the existing terminal are generally sandy, with some areas of gravel and small cobble. One section of riprap along the shoreline near the existing loading berth represents the only rocky subtidal feature with subtidal algae (predominantly brown-bladed algae and sea lettuce).</p> <p>Subtidal habitat provides foraging, refuge, rearing, and migration opportunities for Pacific salmon, Pacific herring, and Dungeness crab.</p>

<b>WUA #2 Pile Installation</b>	<p>The subtidal area is dominated by soft substrates (e.g., silt, sand, and mud) with traces of broken shells and organic debris. Shallow areas to the east and west of the existing terminal are generally sandy with some areas of gravel and small cobble. One section of riprap along the shoreline near the existing loading berth represents the only rocky subtidal feature with subtidal algae (predominantly brown bladed algae and sea lettuce).</p> <p>This habitat provides rearing, foraging, and spawning opportunities for several species including flatfish, sea pens, and Dungeness crab.</p>
<b>WUA #3 Anchor Block Placement</b>	<p>Subtidal area dominated by soft substrates (e.g., silt, sand, and mud).</p> <p>This habitat provides rearing, foraging, and spawning habitat for several species including flatfish, sea pens, and Dungeness crab.</p>

## 2 c) Species at Risk Act

Are Schedule 1 listed aquatic species at risk present in the vicinity of the project?

Yes  No

If yes, list the aquatic species at risk, their status and indicate if critical habitat and/or residence are present in the vicinity of the project.

Code or name of the WUA	SARA Species	Species and habitat status
	<b>May occur in Burrard Inlet:</b> Southern Resident killer whale, Transient (Bigg's) killer whale, Steller sea lion, Harbour porpoise, Humpback whale, Grey whale	<input checked="" type="checkbox"/> Endangered or Threatened <input checked="" type="checkbox"/> Special Concern  <input checked="" type="checkbox"/> No Critical Habitat or Residences present in the vicinity of the project <input type="checkbox"/> Critical Habitat present in the vicinity of the project <input type="checkbox"/> Residences present in the vicinity of the project

## Section 3. Measures to avoid & mitigate impacts to fish & fish habitat

### 3 a) Measures to avoid and mitigate

List key avoidance and mitigation measures the proponent proposes to implement in order to avoid and mitigate impacts to fish and/or fish habitat for specific WUAs.

A comprehensive set of Avoidance and Mitigation Measures has been outlined by the Proponent in its Fisheries Act authorization Application Supporting Document (Section 6.0, Table 9).

#### General Mitigation Measures:

- Design considerations to limit the in-water footprint and eliminate the need for dredging.
- An Erosion and Sediment Control Plan will be developed and implemented with appropriate shore-based measures (some examples are given in Section 6.2.2 in the Application Supporting document).
- Fish salvage and isolation of in-water works will be conducted to the extent possible.
- A qualified Environmental Monitor (EM) will be onsite during in-water construction activities.

- Contingency measures will be identified if mitigation measures are not effective (e.g., adjust or maintain curtains, implement additional measures, increase frequency of monitoring)

**WUA #1 Bulkhead Wall Installation:**

- Work will be conducted during the least risk timing window for Burrard Inlet (August 16 to February 28). Excavation within sheet pile wall cells and infilling completed outside least risk window will in isolation of the aquatic environment to the extent possible.
- A turbidity curtain secured with anchors, buoys, and a weighted chain, will be installed around the work area to contain suspended sediment and limit its dispersal and reduce fish movement into the work area. Water quality monitoring will be conducted following riprap excavation and infilling behind the bulkhead wall.
- Fish salvage targeting CRA fisheries species (e.g., Dungeness crab and surf perch) will be conducted using crab and fish trapping/netting and seines (where possible) within sheet pile cells after installation of each sheet pile cell and prior to excavation of substrate and infilling. Fish caught will be released in suitable habitat at least 500 m away from construction activities. Information on fish caught and release locations will be recorded by the EM.

**WUA #3 Pile Installation:**

- Pile installation will be primarily conducted within least risk windows, but Trans Mountain would conduct work outside the windows with appropriate mitigation in place.
- BC Marine and Pile Driving BMPs will be applied throughout the activity and not dependent on the observation of death of fish.
- Pile driving using a vibratory hammer will be used where practical and feasible, to minimize potential noise effects; underwater noise generated by vibratory pile driving is not as loud as noise generated by impact pile driving.
- Bubble curtains will be deployed around the full wetted circumference of the pile during impact hammering to limit the propagation of underwater noise. A hydrophone will be used to verify that underwater noise does not exceed 30 kPa for fish injury or mortality.
- Impact hammering will be limited to daytime hours to enable effective visual monitoring.
- Prior to commencement of impact pile driving, visual monitoring will be conducted for cetaceans and marine mammals at risk within an exclusion zone of 1 km. This zone will encompass the area where sound levels will exceed 160 dB re: 1μPa, and will be verified and adjusted using hydrophone monitoring as appropriate. Simultaneous visual monitoring will be conducted within a harbor seal-specific exclusion zone of 150 m. Work will only commence if marine mammals are not observed in their respective exclusion zones for 30 minutes. Exclusion zones will be monitored continuously during impact pile driving. If a marine mammal is observed within their respective exclusion zones, pile driving activities will cease until the individual leaves the exclusion zone or is not observed for a period of 30 minutes.
- Underwater noise will be measured using a hydrophone outside the bubble curtain at the start of impact pile driving and for the first several days. If outside the least-risk window, underwater noise will be verified when there are changes in pile driving activities (e.g., hammer size, pile size).
- If sound levels exceed the threshold with a bubble curtain present, or a fish kill is observed, pile driving activities will be ceased and additional mitigation implemented (e.g., use of a fabric curtain to confine bubble streams)

Will all reasonable measures (current best practices) to avoid and mitigate the impacts to fish and fish habitat be applied?

Yes:

No :

If not, provide an explanation by WUA as appropriate:

### 3 b) Additional measures

List any additional avoidance and mitigation measures that should be applied to avoid and mitigate impacts to fish and fish habitat.

1. *The Fisheries Act prohibits serious harm to fish, and section 32 of the Species at Risk Act prohibits the killing of a species at risk. In-water installation of steel pipe piles over 18 inches or 46 cm in diameter by means of a drop hammer, diesel hammer, air hammer, or similar equipment can result in high underwater sound levels (peak pressures) capable of injuring fish and marine mammals. Any pile driving works or activities that result in increases in underwater sound levels (peak pressures) over 22.5 kPa greater than 5 meters from the pile can result in injury to fish, and sound levels exceeding a root mean square Sound Pressure Level (SPLrms) of 160 dB re 1 µPa can injure marine mammals. Pile driving activities that result in exceedances of these sound levels require specific mitigation measures (e.g., bubble curtains, fish exclusion, etc.) to avoid adverse impacts to fish and marine mammals. It is the Proponent's responsibility to ensure that appropriate mitigation measures are employed where necessary so that the work, undertaking or activity does not contravene the Fisheries Act and Species at risk Act.*
2. *Upon commencement of impact pile installation or recommencement of such activities after a delay of 30 minutes or more, pile installation shall ramp-up by starting with less frequent impact strikes of lower force. This ramp-up period is designed to enable any fish and marine mammals that may be in the area time to leave the area prior to the generation of peak pressure and noise levels for pile installation.*
3. *In-water pile driving by means of diesel hammer, air hammer or similar equipment must be monitored with a hydrophone operated by an appropriately qualified individual. As feasible, pressure levels will be recorded at a range of depths throughout the water column and at various distances and directions from the pile being driven. Monitoring shall be carried out throughout the operation, especially during periods of resistance or refusal or in situations of strong currents. Monitoring reports will be provided to DFO.*
4. *If, despite the implementation of mitigation measures, further visual and/or hydrophone monitoring reveals unacceptable conditions (sound pressure level exceedances and/or fish kills), then the work must stop immediately, and the methods will be reviewed and modified in consultation with DFO.*

Have discussion(s) taken place with the proponent to identify these measures? Document whether the proponent has agreed to implement them.

The Proponent is currently assessing whether the pile driving mitigation measures will be employable from an engineering standpoint.

### Section 4. Residual impacts

In this section, describe the residual impact of each WUA.

#### 4 a) Death of fish

In the table below, describe the residual impacts to fish likely to be caused by each WUA in terms of fish mortality (include species at risk).

Code or name of the WUA	Life stage and or species	Cause of mortality (turbines, explosives etc.)	Estimate the likely amount of mortality caused by the WUA (specify unit or level of risk)
WUA #1 Bulkhead Wall Installation	Benthic invertebrates (e.g., Dungeness crab, ochre stars, post settlement juvenile and adult mussels, sea cucumbers)	Crushing Desiccation Burial	Salvage of attached invertebrates is not practical so some death to sessile or slow moving individuals may be unavoidable but there is a lower likelihood that mobile species (e.g., juvenile and adult)

	Finfish (e.g., gunnels and sculpin, juvenile and adult serf perch)		Dungeness crab, adult shrimp, and finfish) will be killed.  Low risk of death to free-swimming species if mitigation measures employed (e.g., finfish and crab salvages).  Negligible mortality/impacts (low risk) to fish and marine mammals with the application of mitigation measures for pile driving.
<b>WUA #2 Pile Installation</b>	Benthic invertebrates (e.g., orange sea pen, Dungeness crab) Finfish (e.g., juvenile and adult flatfish) Pacific salmon, Pacific herring Marine mammal species	Crushing	Negligible mortality/impacts (low risk) to fish and marine mammals with the application of mitigation measures for pile driving.  The loss of sessile individuals is of low risk to the fisheries resource as density is expected to be relatively low in the project area.
<b>WUA #3 Anchor Block Placement</b>	Benthic invertebrates (e.g., orange sea pen, Dungeness crab) Finfish (e.g., juvenile and adult flatfish)	Crushing	Some death of sessile or slow moving species such as benthic infaunal invertebrates is unavoidable. The loss of sessile individuals is of low risk to the fisheries resource as density is expected to be relatively low in the project area.

#### 4 b) Permanent alteration

Describe the duration of the residual impacts to fish habitat (including critical habitat and residence of aquatic species at risk) likely to be caused by each WUA. Also, describe the size and or intensity of the impact and the type of habitat affected. If the WUA causes a disruption or alteration that does not constitute a "permanent alteration", please describe the rationale.

Code or name of the WUA	Describe the permanent alteration likely to be caused by each WUA.
<b>WUA #1 Bulkhead Wall Installation</b>	Riprap excavation (excluding the area to be infilled) will result in permanent alteration of 545 m <sup>2</sup> rocky habitat to predominantly soft substrate on the outer edges of the sheet pile wall: <ul style="list-style-type: none"><li>• 217 m<sup>2</sup> intertidal habitat</li><li>• 328 m<sup>2</sup> subtidal habitat</li></ul>
<b>WUA #2 Pile Installation</b>	None

<b>WUA #3 Anchor Block Placement</b>	Negligible - Anchor block placement will result in alteration of 7 m <sup>2</sup> of subtidal soft-sediment habitat to predominantly hard substrate. This represents a small footprint, and unaffected soft substrate is abundant in the area. The anchor blocks may also serve to add habitat complexity in the largely uniform soft substrate habitat. Residual impacts are unlikely from the placement of anchor blocks.
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#### 4 c) Destruction of habitat

Describe the destruction to fish habitat (including critical habitat and residence of aquatic species at risk) likely to be caused by each WUA in terms of the size of the impact and the type of habitat affected.

Code or name of the WUA	Describe the destruction of habitat likely to be caused by each WUA
<b>WUA #1 Bulkhead Wall Installation</b>	Marine infilling will result in the loss of 5,462 m <sup>2</sup> rocky habitat: <ul style="list-style-type: none"> <li>• 4,196 m<sup>2</sup> intertidal habitat</li> <li>• 1,266 m<sup>2</sup> subtidal habitat</li> </ul> Riparian clearing will result in loss of 3,050 m <sup>2</sup> riparian habitat.
<b>WUA #2 Pile Installation</b>	Pile installation will result in loss of 455 m <sup>2</sup> subtidal soft-sediment habitat.
<b>WUA #3 Anchor Block Placement</b>	None

#### 4 d) Aquatic species at risk

Summarize the residual impacts likely to be caused by each WUA on aquatic species at risk that are listed as endangered or threatened under SARA: harm; harass; capture or kill an individual of an aquatic SARA-listed species; damage or destruction of a residence of an aquatic SARA-listed species; destruction of critical habitat of an aquatic SARA-listed species.

Code or name of the WUA	Describe the residual impacts likely to be caused by each WUA on aquatic species at risk that are listed as endangered or threatened
<b>WUA #1, #2, #3</b>	No residual impacts to aquatic species at risk anticipated with implementation of mitigation measures.

#### 4e) Residual Impacts Summary

Indicate the focus of the likely residual impacts.

Code or name of the WUA	<i>Fisheries Act</i>	<i>Species at Risk Act (SARA)</i>
<b>WUA #1 Bulkhead Wall Installation</b>	<input type="checkbox"/> death of fish <input checked="" type="checkbox"/> permanent alteration to fish habitat <input checked="" type="checkbox"/> destruction of fish habitat <input type="checkbox"/> flow and passage <input type="checkbox"/> N/A*	<input type="checkbox"/> harm, harass, or capture an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> death of an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> damage or destruction of a residence of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> destruction of Critical Habitat of an aquatic SARA-listed endangered or threatened species <input checked="" type="checkbox"/> N/A
<b>WUA #2 Pile Installation</b>	<input type="checkbox"/> death of fish <input type="checkbox"/> permanent alteration to fish habitat <input checked="" type="checkbox"/> destruction of fish	<input type="checkbox"/> harm, harass, or capture an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> death of an individual of an aquatic SARA-listed endangered or threatened species

	<p>habitat</p> <p><input type="checkbox"/> flow and passage</p> <p><input checked="" type="checkbox"/> N/A*</p>	<input type="checkbox"/> damage or destruction of a residence of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> destruction of Critical Habitat of an aquatic SARA-listed endangered or threatened species <input checked="" type="checkbox"/> N/A
<b>WUA #3 Anchor Block Placement</b>	<p><input type="checkbox"/> death of fish</p> <p><input type="checkbox"/> permanent alteration to fish habitat</p> <p><input type="checkbox"/> destruction of fish habitat</p> <p><input type="checkbox"/> flow and passage</p> <p><input checked="" type="checkbox"/> N/A*</p>	<input type="checkbox"/> harm, harass, or capture an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> death of an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> damage or destruction of a residence of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> destruction of Critical Habitat of an aquatic SARA-listed endangered or threatened species <input checked="" type="checkbox"/> N/A

\* If there are no residual impacts or no SARA issues, check « N/A ». If you check « N/A » under both Acts, proceed to section 6.

## ***Section 5. Localized effects assessment***

### **5 a) Fish populations (mortality)**

Describe the significance of the estimated mortality as documented in sections 4a & d.

Code or name of the WUA	Life stage and or species	Significance	Rationale
<b>WUA #1 Bulkhead Wall Installation</b>	Finfish (e.g., gunnels and sculpin, juvenile and adult serf perch)	Low	Low risk of mortality to free swimming species.
	Benthic invertebrates (e.g., Dungeness crab, ochre stars, post settlement juvenile and adult mussels, sea cucumbers)	Low	Minor risk of death to sessile or slow moving individuals.
<b>WUA #2 Pile Installation</b>	Finfish (e.g., juvenile and adult flatfish)	Low	Low risk of mortality to free swimming species and with mitigation measures implemented.
	Pacific salmon, Pacific herring	Low	Low risk of mortality to free swimming species and with mitigation measures implemented.
	Marine mammal species	Low	Low risk of mortality with mitigation measures implemented.
	Benthic invertebrates (e.g., orange sea pen, Dungeness crab)	Low	Minor risk of death to sessile or slow moving individuals.

### 5 b) Fish Habitat

**Part 1 - Assess the significance of the changes to the function and the condition of the habitat likely to be affected by each WUA based on the information documented in Sections 4b, c and d.**

Code or name of the WUA	Describe the changes to the function and the condition of the habitat likely to be affected by each WUA
<b>WUA #1 Bulkhead Wall Installation</b>	<p>The intertidal rocky habitat lost (<math>4,196 \text{ m}^2</math>) provides rearing and foraging opportunities for fish including lingcod and Pacific salmon. The subtidal rocky habitat lost (<math>1,266 \text{ m}^2</math>) provides habitat complexity, refuge, foraging, and spawning opportunities for finfish and benthic invertebrates. This habitat is less abundant in the area than soft sediment habitat. Loss of this habitat has the potential to displace fish. This subtidal rocky habitat is important for rockfish; it is within a Rockfish Conservation Area and similar habitat in the area is limited.</p> <p>The intertidal rocky habitat (<math>217 \text{ m}^2</math>) and subtidal rocky habitat (<math>328 \text{ m}^2</math>) permanently altered to predominantly soft sediment provides important foraging, refuge, rearing, migration, and spawning opportunities for invertebrate and finfish species (e.g., Pacific salmon, Pacific herring, Dungeness crab, rockfish).</p> <p>The riparian habitat being removed is a narrow band (2 to 4 m), heavily modified (i.e., cleared historically and allowed to grow), or anthropogenic (i.e., planted and maintained). It may provide some detrital matter but is unlikely to provide refuge, foraging, or spawning, habitat. The vegetation lacks overhanging branches and tall trees, providing limited shading function. Riparian habitat to the east and west of the terminal which is unaffected by construction, includes more mature, taller tree species, and a denser shrub layer.</p>
<b>WUA #2 Pile Installation</b>	<p>The predominantly soft sediment habitat lost (<math>455 \text{ m}^2</math>) provides rearing, foraging, and spawning habitat for several CRA species including flatfish, sea pens, and Dungeness crab. Although similar habitat is available in abundance in Burrard Inlet, the proposed pile driving activities will be occurring immediately adjacent to habitat affected by WUA #1, and therefore could result in an additive overall negative effect on fisheries productivity in the area.</p>

**Part 2 - Based on the function and condition of the fish habitat described above, regional habitat examples and professional judgement, identify the categories that best describe the habitat that is affected by each WUA and the size of the impacts. Note that multiple habitat categories and sizes can be listed for each WUA.**

Code or name of the WUA	Affected Area ( $\text{m}^2$ ) by habitat category			
	Low or marginal habitat	Average habitat	Important habitat	Exceptional habitat
<b>WUA #1 Bulkhead Wall Installation</b>	$3,050 \text{ m}^2$ riparian		$6,007 \text{ m}^2$ ( $4,413 \text{ m}^2$ intertidal; $1,594 \text{ m}^2$ subtidal)	
<b>WUA #2 Pile Installation</b>		$455 \text{ m}^2$ subtidal		

### 5 c) Aquatic species at risk      N/A

Summarize the effects on aquatic species at risk based on the information provided in 4d.

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***Assessor Sign-off (on sections 1-5 of the form)***

<b>Prepared by:</b>	Elly Chmelnitsky
<b>Date:</b>	April 27, 2017
<b>Comments:</b>	

Version 2, November 30, 2016  
Valid until February 28, 2017

## Section 6. Recommended Communication to the Proponent

### 6 a) Summary of localized effects assessment

Fill in the table below using Yes/No.

Consolidate the findings of sections 5(a) & (b) by indicating if a localized effect is likely for each WUA.

For column 5(b) indicate "Yes" if the size/habitat is found in the red zone of Figure 3, or "No" if it is found in the green zone (regardless of final recommendation in 6 b).

For column 5(c), indicate "Yes" if there are effects on aquatic species at risk and a SARA permit (or a *Fisheries Act* authorization with SARA conditions) must be sought.

Code or name of the WUA	Localized effect		5 c) Aquatic species at risk
	5 a) Fish populations (mortality)	5 b) Fish habitat 	
WUA #1 Bulkhead Wall Installation	No	Yes	No
WUA #2 Pile Installation	No	Yes	No
WUA #3 Anchor Block Placement	No	No	No

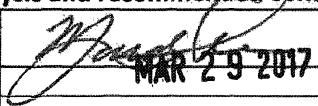
### 6 b) Communication to the proponent

Based on section 6 (a) above and the analysis provided in this form, indicate the type of communication that should be sent to the proponent. Provide a rationale in the box below.

Type of communication	<input type="checkbox"/> Site-specific LoA (Letter C – Avoid & Mitigate) no SAR mitigation <input type="checkbox"/> Site-specific LoA (Letter C – Avoid & Mitigate) with SAR Mitigation <input type="checkbox"/> Letter F3 indicating that a stand-alone SARA Permit should be sought (for section 32 of SARA). This letter may contain mitigation for other fish species. <input checked="" type="checkbox"/> A <i>Fisheries Act</i> authorization should be sought (Letter F1) <input type="checkbox"/> A <i>Fisheries Act</i> EMERGENCY authorization should be sought (Letter P) <input type="checkbox"/> A <i>Fisheries Act</i> authorization with SARA conditions should be sought (Letter F2)
Rationale: Destruction (5,462 m <sup>2</sup> ) and permanent alteration (545 m <sup>2</sup> ) of foraging, refuge, rearing, migration, and spawning rocky habitat for invertebrate and finfish species, and destruction (455 m <sup>2</sup> ) of rearing, foraging, and spawning soft sediment habitat for invertebrate and finfish species will result in a localized effect to fish and fish habitat.	

Reviewed by:	Alston Bonamis
Date:	March 28, 2017
Comments:	The Proponent submitted an application of authorization where-in they concluded that serious harm to fish is likely from WUA#1, but did not anticipate impacts associated with WUA#2 (pile driving). The assessment here-in indicates potential serious harm to fish associated with pile-driving, which would occur in the vicinity of the terminal foreshore expansion works (i.e., within the same localized area). Thus, a <i>Fisheries Act</i> authorization should be required for WUA#1 and WUA #2.

I concur with the analysis and recommended communication:

Regulatory Review Manager:	 TRACEY SANDGATHE
Date:	MAR 29 2017
Comments:	

## **LIST OF APPENDICES**

**Appendix A – Figure showing works, undertakings or activities and Project areas.**

**Appendix B- Matrix for determining the course of action for habitat impacts.**

**Appendix A – Figure showing works, undertakings or activities and project areas.**

**Figure 1: Project components associated with construction of the Westridge Marine Terminal Expansion.**

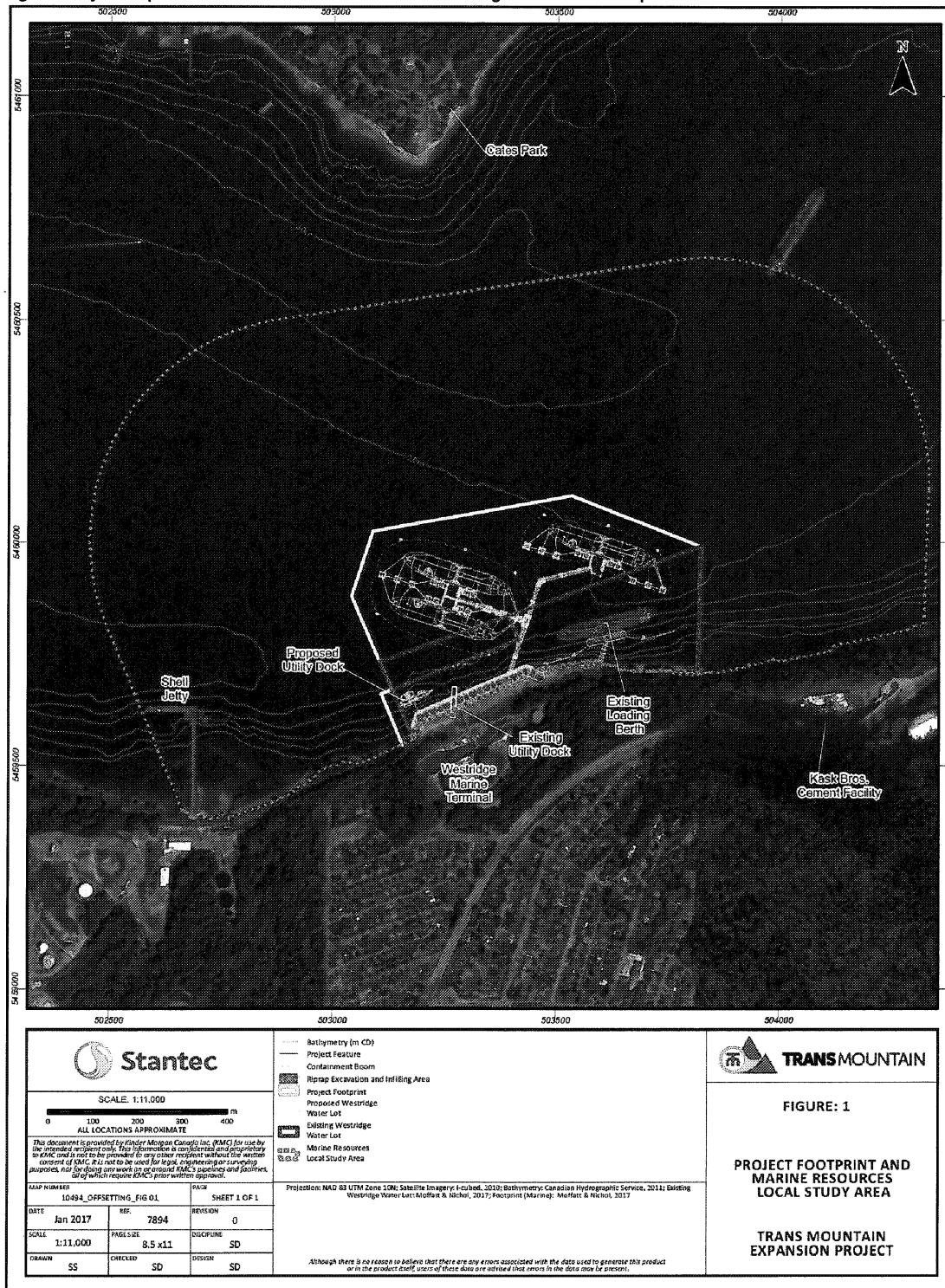
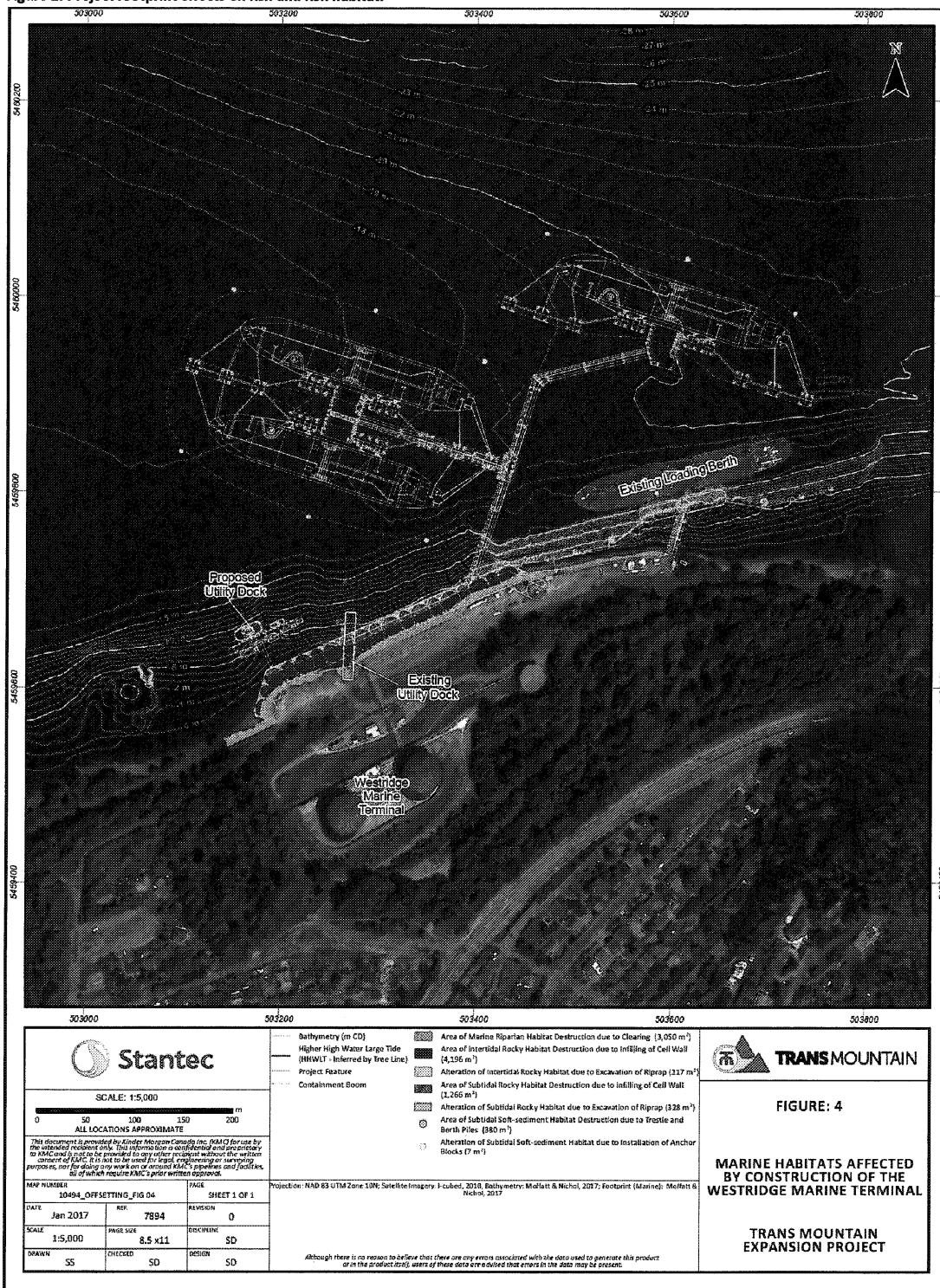


Figure 2: Project footprint effects on fish and fish habitat.



**Version 2, November 30, 2016**  
**Valid until February 28, 2017**

**Appendix B - Matrix for determining the course of action for habitat impacts only.** Green squares recommend issuance of a letter of advice that includes site-specific avoidance and mitigation measures. Red squares recommend that the proponent submit an application for Fisheries Act authorization (with or without SARA conditions as appropriate).

Figure 3 of the *Interim Localized Effect Assessment and Documentation Record (LEADR) Guidance for the Fisheries Protection Program*.

		Function and condition of fish habitat.				
Size of impact (m <sup>2</sup> )	Category	No habitat	Low	Average	Important	Exceptional
	<100					
	100-250					
	250-500					
	500-1000					
	1000-5 000					
	5 000-10 000					
	>10 000					

**Annex 1**

**LOCALIZED EFFECTS ASSESSMENT DOCUMENTATION RECORD (LEADR)**

This completed form must be uploaded to the Referral Action Log of PATH.

**Section 1. Project Description:**

<b>Project Name :</b>	Trans Mountain Expansion Project – Stoney Creek Removal of Riparian Critical Habitat for the Nooksack Dace
<b>Name of the waterbody :</b>	Stoney Creek, near the confluence with the Brunette River
<b>PATH #</b>	18-HPAC-00246
<b>Name of the nearest location :</b>	Burnaby, British Columbia Zone 10, 506592 E, 5455441 N <i>See Appendix A, Photo 1 for crossing location</i>
<b>Water body Types(s) :</b>	<input checked="" type="checkbox"/> Freshwater <input type="checkbox"/> Marine <input type="checkbox"/> Estuarine
<b>Proponent :</b>	Trans Mountain Pipeline ULC. 2700, 300 – 5 Avenue SW Calgary, AB T2P 5J2 403-206-6922
<b>Reg. Review Unit :</b>	Linear
<b>Form prepared by :</b>	Sandra Warren

**1 a) Briefly describe the project**

Trans Mountain Pipeline ULC (Trans Mountain) is expanding its existing 1,150 km pipeline between Edmonton, Alberta and Burnaby, British Columbia. There are 393 defined watercourse crossings within the British Columbia portion along the pipeline route, including 202 fish-bearing and 191 non fish-bearing watercourses.

The Stoney Creek pipeline crossing (BC-785) was identified by the National Energy Board pursuant to the December 2013 MOU<sup>1</sup>, as possibly requiring a SARA-compliant *Fisheries Act* authorization for destruction of riparian critical habitat of the endangered Nooksack dace, listed under Schedule 1 of the *Species at Risk Act*.

Works, undertakings or activities involved in the construction of the pipeline crossing include:

- An aerial crossing located on the south side of Lougheed Highway; and
- Clearing a strip of riparian vegetation located on the south side of Lougheed Highway, between the highway and the existing culvert outlets. The riparian strip is identified as riparian critical habitat for the Nooksack dace; and
- Additional clearing of vegetation located outside of riparian critical habitat for the Nooksack dace, to accommodate temporary workspace during construction of the Stoney Creek aerial crossing.

**\*\*Note that the aerial crossing (1<sup>st</sup> bullet) is not carried forward in this LEADR as no interactions with fish and fish habitat are anticipated. Furthermore, any clearing to accommodate temporary workspaces (3rd bullet) will be located at least 15 m from the west bank of Stoney Creek, and at least 30 m from the east bank of Stoney Creek. Therefore, clearing of vegetation for temporary workspaces is not anticipated to interact with fish and fish habitat or with riparian critical habitat of the Nooksack dace.**

<sup>1</sup> Memorandum of Understanding between the National Energy Board and Fisheries and Oceans Canada for Cooperation and Administration of the Fisheries Act and the Species at Risk Act Related to Regulating Energy Infrastructure. December 2013.

If relevant, provide context or background in Appendix A.

**1 b) Identify and briefly describe all component of works, undertakings or activities (WUA) that have the potential to affect fish and/or fish habitats or aquatic species at risk.**

Code	Name	Brief description
WUA #1	Riparian clearing within Nooksack dace critical habitat	<p>Vegetation located within a 15 m riparian reserve strip of Stoney Creek will be cleared during installation of a permanent retaining wall associated with construction of the aerial crossing. The cleared area behind the retaining wall will be excavated to form a bench to accommodate the pipeline, and then filled to cover the pipeline. The riparian reserve strip has been identified as critical habitat for Nooksack dace (SARA-listed endangered species).</p> <p>The size of the area to be cleared is ~45 m long by 17 m wide, of which a portion overlaps riparian critical habitat for Nooksack dace.</p> <p><i>See Appendix A (Photo 2) for the proposed crossing plan for Stoney Creek, including the location of critical habitat that will be removed.</i></p>

**Section 2. Fish Species Present and Habitat Description**

**2 a) Species**

Code or name of the WUA	Species likely to be affected by the proposed WUA
WUA#1	<p>Coastal Cutthroat Trout; Chinook salmon; Chum salmon; Coho salmon; Rainbow trout/Steelhead; Western Brook Lamprey; Nooksack dace*; pink salmon; Pumpkinseed; Threespined Stickleback</p> <p><i>*Nooksack dace has only been recorded in the lower reaches of Stoney Creek because of a perched culvert at the CN Railway tracks (~230 m downstream from the proposed crossing). Only salmonids are known to migrate past the culvert via an existing fish ladder.</i></p>

**2 b) Habitat description**

Code or name of the WUA	Habitat likely to be affected by the proposed WUA
WUA #1	<p>Stoney Creek flows predominantly in a southwesterly direction through the City of Coquitlam and Burnaby and eventually flows into the Brunette River. The creek is supplied by rainfall draining off Burnaby Mountain, and can therefore be subjected to sudden increases in flow. Stoney Creek is highly urbanized and flows through primarily residential areas.</p> <p>Stoney Creek is identified as Nooksack dace critical habitat which includes the instream environment and a 15 m riparian buffer. The riparian vegetation located above the outlets of the existing culverts that pass under Lougheed Highway (i.e., within the area that is proposed to be cleared) consists primarily of shrubs, grasses, forbs, and invasive species (e.g., holly), with the occasional mature deciduous tree, such as cottonwoods (see Appendix A, Photo 3).</p>

	The site descriptions and photographs submitted by the proponent were verified by an on-site visit by DFO staff on January 29, 2018. Appendix A, Photo 4 was taken during the DFO site visit. DFO confirmed that the existing vegetation has been previously disturbed and has limited functional value relative to other areas along the creek. However, it does provide the features and functions that are critical for the Nooksack dace to carry out its life-history, such as the provision of shade, insect input, slope stability, and interception of surface water runoff from the highway.
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### 2 c) Species at Risk Act

Are Schedule 1 listed aquatic species at risk present in the vicinity of the project?

Yes  No

If yes, list the aquatic species at risk, their status and indicate if critical habitat and/or residence are present in the vicinity of the project.

Code or name of the WUA	SARA Species	Species and habitat status
WUA #1	Nooksack Dace	<input checked="" type="checkbox"/> Endangered or Threatened <input type="checkbox"/> Special Concern  <input type="checkbox"/> No Critical Habitat or Residences present in the vicinity of the project <input checked="" type="checkbox"/> Critical Habitat present in the vicinity of the project <input type="checkbox"/> Residences present in the vicinity of the project

### Section 3. Measures to avoid & mitigate impacts to fish & fish habitat

#### 3 a) Measures to avoid and mitigate

List key avoidance and mitigation measures the proponent proposes to implement in order to avoid and mitigate impacts to fish and/or fish habitat for specific WUAs.

- A qualified Environmental Professional will be onsite during construction activities.
- Erosion and sediment control measures will be installed above the existing culverts and around the perimeter of the riparian area setbacks to avoid sediment from entering the watercourse.
- Duration of all construction works will be kept to an absolute minimum.
- All construction immediately above the culverts of Stoney Creek will occur between August 1 – September 15. This timing will avoid overlap with the spawning period for Nooksack dace, which is April through May.
- The embankment retained above the culverts, and cleared areas outside the riparian buffer, will be hydroseeded and re-vegetated following construction.
- Provincial and Federal Best Management Practices will be implemented, including Measures to Avoid Causing Harm to Fish and Fish Habitat (DFO 2014); A Users' Guide for Working in and Around Water (BC Ministry of Environment 2005); and, Standards and Best Practices for instream Works (BC Ministry of Water, Land and Air Protection 2004).
- Water quality monitoring will be conducted to ensure water quality at, and downstream from, the construction site does not approach or exceed established federal and provincial guidelines.
- Once the pipeline has been installed, the area of retained fill will be hydroseeded and re-vegetated. Pockets will be built into the vertical face of the retaining wall to allow vegetation to be added and increase the amount of overhanging vegetation at the culvert outlets.

Will all reasonable measures (current best practices) to avoid and mitigate the impacts to fish and fish habitat be applied?

Yes:

No :

If not, provide an explanation by WUA as appropriate:

### 3 b) Additional measures

List any additional avoidance and mitigation measures that should be applied to avoid and mitigate impacts to fish and fish habitat.

Have discussion(s) taken place with the proponent to identify these measures? Document whether the proponent has agreed to implement them.

## Section 4. Residual impacts

In this section, describe the residual impact of each WUA.

### 4 a) Death of fish

In the table below, describe the residual impacts to fish likely to be caused by each WUA in terms of fish mortality (include species at risk).

Code or name of the WUA	Life stage and or species	Cause of mortality (turbines, explosives etc.)	Estimate the likely amount of mortality caused by the WUA (specify unit or level of risk)
N/A			

### 4 b) Permanent alteration

Describe the duration of the residual impacts to fish habitat (including critical habitat and residence of aquatic species at risk) likely to be caused by each WUA. Also, describe the size and or intensity of the impact and the type of habitat affected. If the WUA causes a disruption or alteration that does not constitute a "permanent alteration", please describe the rationale.

Code or name of the WUA	Describe the permanent alteration likely to be caused by each WUA.
N/A	

### 4 c) Destruction of habitat

Describe the destruction to fish habitat (including critical habitat and residence of aquatic species at risk) likely to be caused by each WUA in terms of the size of the impact and the type of habitat affected.

Code or name of the WUA	Describe the destruction of habitat likely to be caused by each WUA
WUA #1	<b>Residual effect anticipated</b> - Installation of a permanent retaining wall will involve removal of riparian vegetation within a 15 m riparian reserve strip designated as critical habitat for the Nooksack dace. Although Nooksack dace are not expected to occur near the proposed crossing (because of a barrier located ~230 m downstream), the riparian reserve strip is part of the critical habitat identified in the recovery strategy for the Nooksack dace and is protected by the <i>Critical Habitat of the Nooksack Dace</i>

	( <i>Rhinichthys cataractae</i> ssp.) Order. Riparian clearing is expected to result in the destruction of at least 100 m <sup>2</sup> of critical habitat, which is therefore anticipated to result in a residual effect to fish habitat.
--	--

#### 4 d) Aquatic species at risk

Summarize the residual impacts likely to be caused by each WUA on aquatic species at risk that are listed as endangered or threatened under SARA: harm; harass; capture or kill an individual of an aquatic SARA-listed species; damage or destruction of a residence of an aquatic SARA-listed species; destruction of critical habitat of an aquatic SARA-listed species.

Code or name of the WUA	Describe the residual Impacts likely to be caused by each WUA on aquatic species at risk that are listed as endangered or threatened
WUA #1	<b>Residual effect anticipated</b> - Riparian clearing will result in the destruction of at least 100 m <sup>2</sup> of critical habitat for the Nooksack dace, which is prohibited under s. 58(1) of the <i>Species at Risk Act</i> .

#### 4e) Residual Impacts Summary

Indicate the focus of the likely residual impacts.

Code or name of the WUA	Fisheries Act	Species at Risk Act (SARA)
WUA #1	<input type="checkbox"/> death of fish <input type="checkbox"/> permanent alteration to fish habitat <input checked="" type="checkbox"/> destruction of fish habitat <input type="checkbox"/> flow and passage <input type="checkbox"/> N/A*	<input type="checkbox"/> harm, harass, or capture an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> death of an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> damage or destruction of a residence of an aquatic SARA-listed endangered or threatened species <input checked="" type="checkbox"/> destruction of Critical Habitat of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> N/A

\* If there are no residual impacts or no SARA issues, check « N/A ». If you check « N/A » under both Acts, proceed to section 6.

### Section 5. Localized effects assessment

#### 5 a) Fish populations (mortality)

Describe the significance of the estimated mortality as documented in sections 4a & d.

Code or name of the WUA	Life stage and or species	Significance	Rationale
N/A			

#### 5 b) Fish Habitat

**Part 1** - Assess the significance of the changes to the function and the condition of the habitat likely to be affected by each WUA based on the information documented in Sections 4b, c and d.

Code or name of the WUA	Describe the changes to the function and the condition of the habitat likely to be affected by each WUA
WUA #1	<b>A localized effect is anticipated</b> - Riparian clearing is expected to result in the destruction of at least 100 m <sup>2</sup> of riparian critical habitat, which is of exceptional value due to its rarity and importance to the endangered Nooksack dace. Although the existing vegetation has been previously disturbed, it contributes to the

	functioning of the watercourse through the provision of shade, insect input, slope stability, and interception of surface water runoff from the highway.
--	--

**Part 2** - Based on the function and condition of the fish habitat described above, regional habitat examples and professional judgement, identify the categories that best describe the habitat that is affected by each WUA and the size of the impacts. Note that multiple habitat categories and sizes can be listed for each WUA.

Code or name of the WUA	Affected Area (m <sup>2</sup> ) by habitat category			
	Low or marginal habitat	Average habitat	Important habitat	Exceptional habitat
WUA #1				>100 m <sup>2</sup> of riparian critical habitat

**5 c) Aquatic species at risk**  **N/A**

Summarize the effects on aquatic species at risk based on the information provided in 4d.

The proposed works will result in the removal of at least 100 m<sup>2</sup> of riparian habitat designated as critical habitat for the Nooksack dace. Critical habitat is categorized as 'exceptional' habitat due to its rarity and importance, and therefore loss of critical habitat is expected to result in a localized effect and destruction of critical habitat under s. 58(1) of the Species at Risk Act.

**Assessor Sign-off (on sections 1-5 of the form)**

Prepared by:	Sandra Warren <i>S. Warren</i>
Date:	2018-04-09
Comments:	<p>Riparian clearing will result in the removal of at least 100 m<sup>2</sup> of riparian vegetation designated as critical habitat for the endangered Nooksack dace; therefore, destruction of critical habitat is expected under the Species at Risk Act and serious harm to fish is anticipated under the Fisheries Act.</p> <p><b>SARA s. 73(1) notes that a permit may only be issued if:</b></p> <p>(a) <i>the activity is scientific research relating to the conservation of the species and conducted by qualified persons;</i></p> <p>(b) <i>the activity benefits the species or is required to enhance its chance of survival in the wild; or</i></p> <p>(c) <i>affecting the species is incidental to the carrying out of the activity.</i></p> <p>The proposed work, undertaking or activity satisfies s. 73(1)(c) of SARA, as clearing of a portion of riparian critical habitat is necessarily incidental to installation of the aerial crossing at Stoney Creek, which is aimed at avoiding impacts to instream critical habitat. Alternate options for installation of the pipeline across the creek (e.g., horizontal directional drilling) are not feasible because of limitations associated with the current geometry of the alignment, in conjunction with numerous existing underground utilities and infrastructure. The proposed method is the least invasive option, and will likely result in a net benefit to riparian critical habitat through removal of invasive vegetation (e.g., English Ivy) and the replanting of native vegetation following construction.</p> <p><b>SARA Pre-conditions [s. 73(3)] that must be met before a permit can be issued:</b></p> <p>(a) <i>all reasonable alternatives to the activity that would reduce the impact on the species have been considered and the best solution has been adopted;</i></p> <p>(b) <i>all feasible measures will be taken to minimize the impact of the activity on the species or its critical habitat or the residences of its individuals; and</i></p> <p>(c) <i>the activity will not jeopardize the survival or recovery of the species.</i></p>

	<p>The proposed work, undertaking or activity (i.e., clearing of riparian critical habitat) meets the SARA pre-conditions described above as follows:</p> <p>(a) The Proponent considered all reasonable alternatives to reducing its impact on riparian critical habitat including conducting subsurface drilling outside of the riparian zone; however, the current geometry of the alignment, in conjunction with numerous existing underground utilities and infrastructure, rules out the option for horizontal drilling.</p> <p>(b) The chosen method of crossing Stoney Creek (i.e., aerial crossing) avoids any impacts to the instream critical habitat and only impacts a strip of riparian critical habitat located above the existing culvert outlets. The existing riparian vegetation located on the right and left banks of the creek will remain intact and will continue to provide the features and functions critical for the Nooksack dace to carry out its life-history. All other clearing activities (i.e., to create space for temporary workspaces) will be conducted outside of the designated critical habitat for Nooksack dace. Upon completion of the works, cleared areas will be replanted with native vegetation as per the commitments made by the Proponent. Replanting is anticipated to result in a net benefit for the species.</p> <p>(c) The temporary loss of the riparian vegetation is not anticipated to jeopardize the survival or recovery of the Nooksack dace given:</p> <ul style="list-style-type: none"><li>• The instream critical habitat adjacent to the area where the riparian habitat is being impacted is of limited value for the Nooksack dace, relative to other areas along the creek;</li><li>• Nooksack dace are not expected to occupy the reach at the proposed crossing because of a perched culvert located downstream of the crossing, that acts as a barrier;</li><li>• The proponent is proposing to install silt fencing around the work area (i.e., above the existing culverts), as well as around the perimeter of the riparian area setbacks, to limit transport of sediments and debris into the aquatic environment, and to provide for bank stability (i.e., to limit erosion);</li><li>• The riparian vegetation currently present in the proposed riparian removal area consists primarily of shrubs, grasses, forbs, and invasive species (e.g., English Ivy and holly), with the occasional mature deciduous tree, which provide relatively low-value riparian habitat for the fish. However, after the works, undertakings or activities are completed, the site will be restored, and native riparian vegetation shall be replanted to provide higher quality riparian habitat.</li></ul>
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Version 2, November 30, 2016

Valid until February 28, 2017

## Section 6. Recommended Communication to the Proponent

### 6 a) Summary of localized effects assessment

Fill in the table below using Yes/No.

Consolidate the findings of sections 5(a) & (b) by indicating if a localized effect is likely for each WUA.

For column 5(b) indicate "Yes" if the size/habitat is found in the red zone of Figure 3, or "No" if it is found in the green zone (regardless of final recommendation in 6 b).

For column 5(c), indicate "Yes" if there are effects on aquatic species at risk and a SARA permit (or a Fisheries Act authorization with SARA conditions) must be sought.

Code or name of the WUA	Localized effect		5 c) Aquatic species at risk
	5 a) Fish populations (mortality)	5 b) Fish habitat	
WUA #1		Yes	Yes

### 6 b) Communication to the proponent

Based on section 6 (a) above and the analysis provided in this form, indicate the type of communication that should be sent to the proponent. Provide a rationale in the box below.

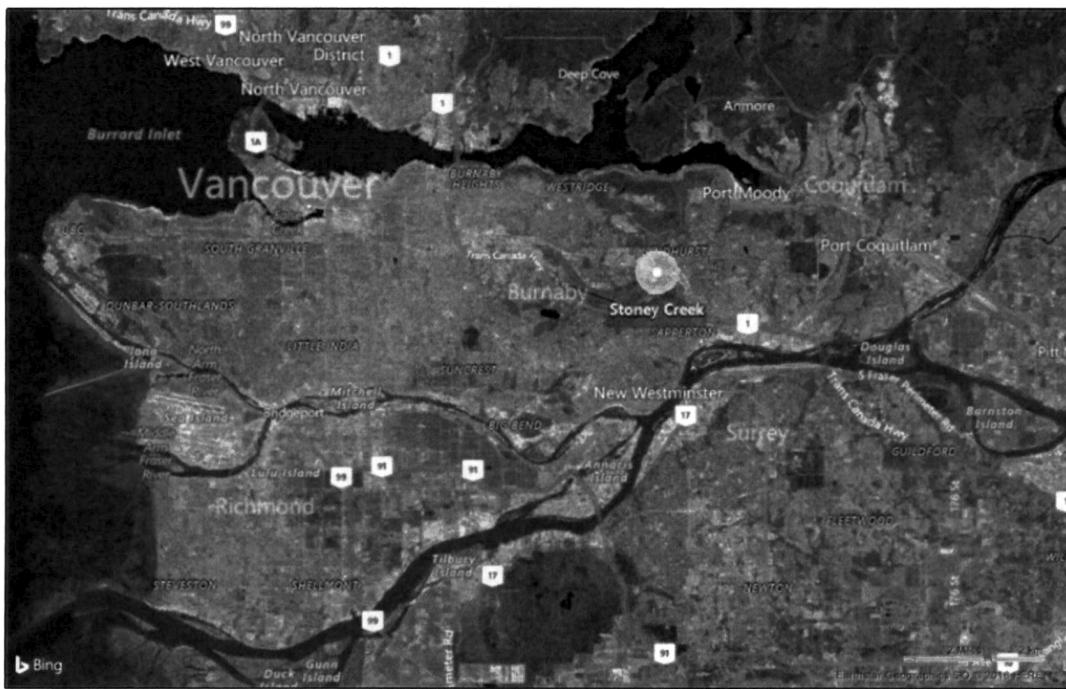
Type of communication	<input type="checkbox"/> Site-specific LoA (Letter C – Avoid & Mitigate) no SAR mitigation <input type="checkbox"/> Site-specific LoA (Letter C – Avoid & Mitigate) with SAR Mitigation <input type="checkbox"/> Letter F3 indicating that a stand-alone SARA Permit should be sought (for section 32 of SARA). This letter may contain mitigation for other fish species. <input type="checkbox"/> A Fisheries Act authorization should be sought (Letter F1) <input type="checkbox"/> A Fisheries Act EMERGENCY authorization should be sought (Letter P) <input checked="" type="checkbox"/> A Fisheries Act authorization with SARA conditions should be sought (Letter F2)
Rationale:	

Reviewed by:	Aiston Bonamis
Date:	April 9, 2018
Comments:	

I concur with the analysis and recommended communication:

Regulatory Review Manager:	Tracey Sandoe
Date:	APR 10 2018
Comments:	

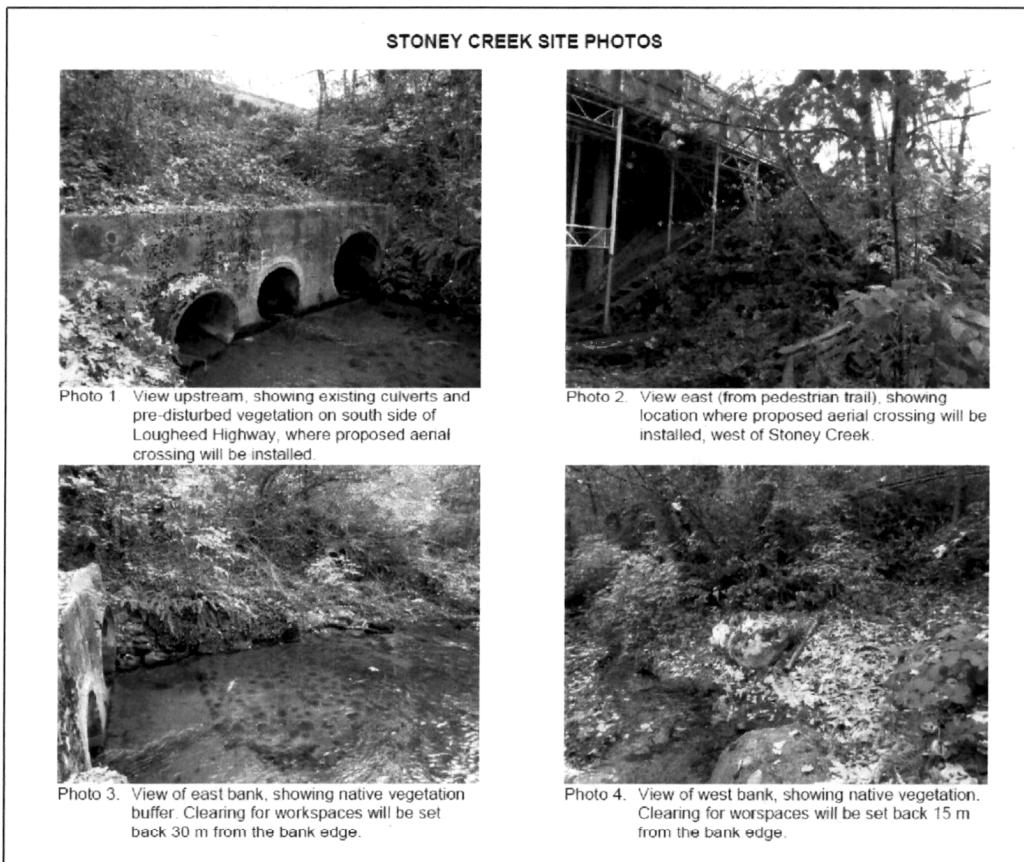
**Appendix A** - Add any additional references or information (optional). Upload photos into PATH as per data entry protocol and reference them here.



**Photo 1. Location of Stoney Creek watercourse crossing**



Photo 2. Critical Habitat (CH) for the endangered Nooksack dace protected by SARA Order. CH includes a 15m riparian buffer on both banks and all instream habitat. Trans Mountain proposes to clear riparian CH between the culvert headwall and Lougheed Highway to install the pipeline over the watercourse.



**Photo 3. Stoney Creek site photos.**



**Photo 4. Existing vegetation that is designated as riparian critical habitat for the Nooksack dace.**

**Appendix B - Matrix for determining the course of action for habitat impacts only.** Green squares recommend issuance of a letter of advice that includes site-specific avoidance and mitigation measures. Red squares recommend that the proponent submit an application for Fisheries Act authorization (with or without SARA conditions as appropriate).

Figure 3 of the *Interim Localized Effect Assessment and Documentation Record (LEADR) Guidance for the Fisheries Protection Program*.

		Function and condition of fish habitat.				
Size of impact (m <sup>2</sup> )	Category	No habitat	Low	Average	Important	Exceptional
	<100					
	100-250					
	250-500					
	500-1000					
	1000 - 5 000					
	5 000-10 000					
	>10 000					



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LITIGATION PRIVILEGE  
GCCMS #: 2017-505-00067  
EKME #: 3824806

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To: Rebecca Reid Date:  
Pour:

Object: **TRANS MOUNTAIN EXPANSION PROJECT APPLICATION FOR**  
Objet: **FISHERIES ACT, 35(2)(B) AUTHORIZATION FOR WESTRIDGE MARINE**  
**TERMINAL EXPANSION**

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From / Diana Trager, A/RD EMB Pacific *JK*  
De: **SEP 07 2017**

Additional approvals:  
Autre(s) approbation(s):

Material for the Minister  
Documents pour le Ministre

 X

Your Signature  
Votre signature

Information

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Screen: The Department has assessed this issue in full.  
Filtre:  It contains no reference to matters covered by the screen relating to J.D. Irving Limited.  
 It contains matters referenced in the screen relating to J.D. Irving Limited, but in our view does not engage the screen.  
 In our view, the screen relating to J.D. Irving Limited should be engaged.

---

Remarks: This briefing note was developed in consultation with the following  
Remarques: regions/sectors:

---

Distribution: Please indicate name of people to receive a copy and if prior or following  
the DM approval.  
Philippe Morel, ADM Aquatic Ecosystems

---

Drafting Officer/  
Rédacteur:

TRACEY SANDGATHE 604-666-0129/Diana Trager/SP



Fisheries and Oceans  
Canada

Pacific Region

Pêches et Océans  
Canada

Région du Pacifique

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LITIGATION PRIVILEGE

2017-505-00067

EKME #: 3824806

**MEMORANDUM FOR THE REGIONAL DIRECTOR GENERAL**

**TRANS MOUNTAIN EXPANSION PROJECT  
APPLICATION FOR A *FISHERIES ACT*, 35(2)(b) AUTHORIZATION FOR  
WESTRIDGE MARINE TERMINAL EXPANSION  
(FOR DECISION)**

**SUMMARY**

Following the November 29, 2016 decision of the Governor-in-Council which had the effect of approving the Trans Mountain Expansion Project, Trans Mountain Pipeline ULC (the Proponent) submitted an Application for a *Fisheries Act* Authorization to Fisheries and Oceans Canada (DFO or the Department) on February 6, 2017 for the construction of works, undertakings and activities associated with the expansion of the Westridge Marine Terminal near Burnaby, British Columbia (the Application for Authorization), to increase the berthing capacity of the existing terminal from one berth to three vessel berths. On June 20, 2017, the Proponent provided DFO with an addendum to the Application for Authorization (the Addendum), containing information on additional works, undertakings or activities associated with the proposed terminal expansion.

DFO initiated a regulatory review of the Application and the Addendum pursuant to the *Applications for Authorization under Paragraph 35(2)(b) of Fisheries Act Regulations*, considerations of the list of factors set out in Section 6 of the *Fisheries Act*, and consistent with existing Fisheries Protection Program policies and operational procedures, including conducting consultations with 33 potentially affected Indigenous groups. DFO has determined that potential impacts to fish and fish habitat from the proposed works, undertakings and activities can be avoided or mitigated using standard mitigation measures, and that the offsetting proposed is technically and biologically feasible and is anticipated to more than counterbalance any residual serious harm to fish.

Since commencing consultation with Indigenous groups on March 2, 2017, DFO has made efforts to ensure potentially affected Indigenous groups, including Tsleil-Waututh Nation,

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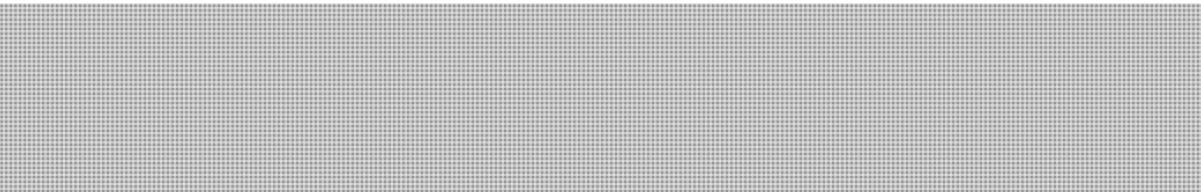
**SOLICITOR-CLIENT PRIVILEGE**  
**LITIGATION PRIVILEGE**

- 2 -

s.21(1)(b)

s.23

Musqueam Indian Band and Squamish Nation, have had meaningful opportunities to provide input on the Application for Authorization, the Addendum, the draft conditions of authorization, and DFO's contemplated Crown conduct (i.e., the potential issuance of a *Fisheries Act* authorization) for the proposed terminal expansion. The Department has also responded to issues, questions, and comments raised by Indigenous groups, and has attempted to address concerns to the extent possible within the conditions of authorization.



A decision on whether to issue the Authorization under Paragraph 35(2)(b) of the *Fisheries Act* is required. Given DFO is of the view it has fulfilled its duty to consult, will pursue further accommodation measures and has determined that issuance of the authorization will provide for the sustainability and ongoing productivity of commercial, recreational and Aboriginal (CRA) fisheries, it is recommended that the Regional Director General issue the Authorization under Paragraph 35(2)(b) of the *Fisheries Act*.

## **CONSIDERATIONS FOR DECISION-MAKING**

### **Project Overview:**

The Trans Mountain Expansion Project (TMX Project) is a proposal to expand the existing Trans Mountain pipeline system between Edmonton, Alberta and Burnaby, British Columbia. It involves approximately 987 km of new pipeline, new and modified facilities (e.g., pump stations and tanks), and the reactivation of 193 km of existing pipeline. Also proposed is the expansion of the Westridge Marine Terminal located in Burrard Inlet to accommodate 34 tankers per month (up from five per month). To handle the increased traffic volume, the Westridge Marine Terminal will be expanded from one berth to three berths, including the construction of one utility dock for tugs, boats, and emergency response vehicles.

### **Environmental Assessment:**

The National Energy Board (NEB) conducted an environmental assessment (EA) of the TMX Project in accordance with its authority under the *National Energy Board Act* (NEB Act) and the *Canadian Environmental Assessment Act, 2012* (CEAA 2012). Fisheries and Oceans Canada (DFO or the Department) participated as an Intervenor in the NEB-led EA hearing process, and filed written evidence and responded to numerous information requests from the NEB and other Intervenors. The hearing process concluded on February 17, 2016 and the NEB issued its final report on May 19, 2016. Following the release of the NEB report, DFO participated in whole-of-

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government Crown consultation with coastal Indigenous groups on the findings of the NEB report and the certificate conditions recommended therein.

The NEB report concluded that the effects from the operation of project-related marine shipping (which were considered pursuant to the NEB's authority under the NEB Act) is likely to result in significant adverse effects to the Southern Resident Killer Whale (SRKW), and that it is likely to result in significant adverse effects on Indigenous cultural uses associated with these marine mammals. The NEB also found that greenhouse gas emissions from project-related marine vessels would be significant. The NEB noted that the SRKW are of great cultural significance (e.g., historical harvesting, story-telling, and spiritual importance) to Indigenous groups, and loss of this species would have a significant impact on the ability of coastal Indigenous groups to carry on traditional cultural practices.

On November 29, 2016, the Governor-in-Council (GiC) approved the TMX Project subject to the 157 conditions identified by the NEB, finding the project to be in the public interest. Included with the approval is the provision of up to \$64.7 million in funding for an Indigenous Advisory and Monitoring Committee (IAMC) that will work with federal regulators to review and monitor environmental, safety and socio-economic issues throughout the project life cycle. In approving the project, the government also committed to taking actions to more than mitigate underwater noise increases resulting from incremental tanker traffic associated with the project. On January 11, 2017, the Government of British Columbia issued an environmental assessment certificate for the TMX Project which included an additional 37 conditions.

### **Litigation:**

In June 2016, seven judicial review applications were filed in the Federal Court of Appeal, each of which challenges the adequacy of the NEB's report. The applicants are the Raincoast Conservation Foundation, City of Vancouver, Kwantlen/Cheam/Chewathil First Nations (who have since discontinued their application), Tsleil-Waututh Nation (TWN), Squamish Nation, Coldwater Indian Band and City of Burnaby. The challenges commenced by the Indigenous groups also allege the NEB failed to fulfill its duty to consult prior to submitting the report.

In December 2016 and January 2017, nine further applications for judicial review were filed which challenge the GiC's Order in Council which had the effect of approving the TMX Project. The applicants are the Living Oceans Society and Raincoast Conservation Foundation, Musqueam Indian Band (Musqueam), Squamish Nation, Coldwater Indian Band, Upper Nicola Band, Stó:lō groups, Sewepemc Nation, TWN and the City of Burnaby. The Indigenous groups argue the GiC's Order in Council should be overturned on the basis that the Crown breached its duty to consult and accommodate them with respect to the project. TWN also assert the approval unjustifiably infringes their title and rights, while the Stó:lō and Musqueam allege the project unjustifiably infringes their fishing rights. The Living Oceans Society and Raincoast Conservation Foundation argue the approval was unlawfully issued without due consideration of the impact of marine shipping on SRKW. All 15 ongoing judicial reviews have been consolidated and will be heard October 2-13, 2017 in Vancouver, British Columbia.

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### **Regulatory Review:**

On February 6, 2017, Trans Mountain Pipeline ULC (the Proponent) submitted an Application for Authorization (the Application for Authorization) under Paragraph 35(2)(b) of the *Fisheries Act* to DFO for works, undertakings or activities associated with the expansion of the existing Westridge Marine Terminal in Burrard Inlet. The *Applications for Authorization under Paragraph 35(2)(b) of the Fisheries Act Regulations* (the Regulations) set out the application process, information requirements and timelines for decisions.

On March 2, 2017, the Department initiated consultation with 33 potentially affected Indigenous groups on the Proponent's Application for Authorization. On April 4, 2017, following a review of the Application for Authorization, the Application was deemed complete. The 90-day regulated time limit within which a decision must be made on the Application for Authorization however ceased to apply under paragraph 8(1)(d) of the Regulations as Indigenous consultations were ongoing and are required prior to the Department making a decision on a requested *Fisheries Act* authorization.

On June 20, 2017, DFO received an addendum to the Application for Authorization from the Proponent (the Addendum), providing additional information on proposed works, undertakings or activities that were not included in the Application for Authorization. As a result of the additional information provided by the Proponent in the Addendum, the Proponent's application could no longer be considered complete and was reassessed. On August 4, 2017, DFO completed its review of the additional information and notified the Proponent that its application for a Paragraph 35(2)(b) *Fisheries Act* authorization was now complete. However, the 90-day time limit did not yet apply to accommodate continued consultations with Indigenous groups.

Concurrent with Indigenous consultation activities, the Department has continued its review of the Application for Authorization and the Addendum adhering to Fisheries Protection Program policies and operational procedures.

The works, undertakings and activities proposed by the Proponent include:

- Land-based site preparation, including clearing of marine riparian vegetation;
- Installation of a bulkhead wall, which will be constructed through excavation of existing shoreline riprap, linear installation of circular sheet-pile cells to form the bulkhead wall, and infilling of the shoreline area behind the bulkhead wall to accommodate new onshore infrastructure;
- Installation of permanent piles for the construction of three new loading berths, an access trestle, a utility dock, and a foam water supply pump house platform;
- Placement of concrete anchor blocks to secure marine containment booms;
- Decommissioning and removal of the existing small utility dock;

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- Installation of temporary template piles to support the placement and installation of permanent piles, and installation of temporary working piles to support a marine construction office and foreshore construction;
- Marine riparian clearing for construction of the marine construction office;
- Placement of temporary marine anchors for securing the marine construction safety boom, and installation of concrete anchor blocks to anchor the turbidity curtain;
- Excavation of additional rip-rap within an area extending 5 m seaward of the bulkhead wall for the installation of sheet pile cells, followed by replacement of the excavated rip-rap over the same area;
- Installation of surface water runoff outfall pipes and rip-rap placement to support and armour the outfall pipes; and
- Construction and operation of marine water intakes which will be enclosed within a fish screen, along with excavation and placement of rip-rap beneath footprint of fish screen.

A detailed assessment of the proposed works, undertakings or activities was conducted by DFO staff and it was confirmed that a subset of these works, undertakings or activities would result in serious harm to fish, requiring an authorization under the *Fisheries Act* (**Annex B**). Standard avoidance and mitigation measures have been proposed by the Proponent (e.g., design considerations to limit construction footprints, fish salvage, erosion and sediment control measures, isolation of in-water works, environmental monitoring, etc.) to mitigate impacts to fish and fish habitat. In addition, DFO is requiring the Proponent within conditions of a potential authorization (**Annex A**) to implement additional measures to minimize impacts to fish and fish habitat (e.g., limiting all work in an area 50 m seawards from the high water mark to a modified work window for Burrard Inlet to reduce impacts to out-migrating juvenile salmon; and utilization of a more conservative sound threshold for pile driving activities outside the work window).

After the implementation of avoidance and mitigation measures, the serious harm to fish likely to result from the proposed works, undertakings or activities is:

- Destruction of **4,196 m<sup>2</sup>** of intertidal rocky habitat from installation of the bulkhead wall and infilling behind the bulkhead wall to the shoreline;
- Destruction of **1,266 m<sup>2</sup>** of subtidal rocky habitat from infilling behind the bulkhead wall to the shoreline;
- Destruction of **455 m<sup>2</sup>** subtidal soft-sediment habitat from installation of permanent piles;
- Permanent alteration of **217 m<sup>2</sup>** of intertidal rocky habitat and **328 m<sup>2</sup>** of subtidal rocky habitat to soft sediment habitat from excavation of riprap prior to installation of the bulkhead wall;
- Permanent alteration of **3 m<sup>2</sup>** of intertidal habitat from the installation of working piles to support the marine construction office; and
- Permanent alteration of **113 m<sup>2</sup>** of intertidal rocky habitat from installation of a surface water run-off outfall pipe at the western end of the terminal foreshore expansion.

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To offset these impacts ( $6,578 \text{ m}^2$ ), the Proponent has proposed the construction of intertidal and subtidal rock reefs (approximately  $9,011 \text{ m}^2$ ) in the immediate vicinity of the habitat impacted by the terminal expansion. DFO reviewed the Proponent's Offsetting Plan and determined that the design of the proposed rock reef offsetting is in line with DFO's *Fisheries Productivity Investment Policy: A Proponent's Guide to Offsetting*, and anticipates that this offset ratio (approximately 1.4:1) will offset losses to fisheries productivity from the proposed works, undertakings or activities and will also account for temporal lags associated with the onset in the productivity of the new habitat created (**Annex C – Summary of Offsetting**).

The rock reef offsetting will be made up of three different types of reefs overlapping the intertidal and subtidal zones in the vicinity of the terminal foreshore expansion, including:

1. **Nursery reefs** – composed of two reef components, covering an area of  $3,880 \text{ m}^2$  and made-up of a 1.5 m thick layer of large cobbles and small boulders, intended to provide refuge for juvenile fish, including juvenile rockfish and salmon;
2. **Integrated reefs** – composed of three components, covering an area of  $2,193 \text{ m}^2$  with 1/3 low-relief and 2/3 high-relief rocky habitat for juvenile and adult rockfish; and
3. **Adult reefs** – composed of five components, covering  $2,938 \text{ m}^2$  and made-up of a 1.5 m thick layer of medium-large boulders intended to provide refuge habitat for adult rockfish.

The rock reef offsetting is designed to provide habitat for inshore rockfish and would be located within the Eastern Burrard Inlet Rockfish Conservation Area. Consistent with DFO's *Rockfish Conservation Strategy*, the rock reef offsetting helps to protect and conserve rockfish populations and provides habitat to help maintain the productivity of inshore rockfish species, including the copper and quillback rockfish. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assessed the quillback rockfish as threatened in 2009. The rock reef offsetting will help maintain or enhance local populations for this species, and thus helps support local restoration priorities within the Rockfish Conservation Area.

In addition to rockfish, juvenile Pacific salmon and other nearshore fish species are also anticipated to benefit from the offsets, as the location of the reefs in nearshore waters will likely promote the growth and establishment of algal species, which in turn will provide rearing and refuge habitat for juvenile Pacific salmon, Pacific herring, and lingcod. Invertebrate species such as Dungeness crabs, which are of importance to commercial, recreational and Indigenous (CRA) fisheries, are also anticipated to benefit from creation of the reef complex, as the seaward extent of the rock reefs is adjacent to soft-sediment areas most likely to be used by Dungeness crabs. The reefs will thus be located at depths that minimize potential impacts to Dungeness crabs, while increasing primary and secondary productivity, thereby enhancing foraging and refuge habitat for the crabs.

Construction of the reef complex will increase habitat complexity within the existing uniform soft-bottom subtidal habitat, and is anticipated to increase overall fisheries productivity and species diversity.

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The Proponent has provided an irrevocable standby letter of credit [REDACTED]

[REDACTED] In the event the Proponent fails to implement the offsetting plan, DFO may draw on the funds set aside to cover the cost of implementing measures to offset serious harm to fish resulting from the serious harm authorized.

s.20(1)(c)

#### ***Fisheries Act Authorization:***

Under Paragraph 35(2)(b) of the *Fisheries Act*, the Minister has the authority to authorize works, undertakings or activities that cause serious harm to fish. A potential authorization for the proposed terminal expansion has been developed consistent with the national template and includes enforceable conditions that the Proponent is required to follow. The conditions of the authorization are set out with the objective of providing for the sustainability and ongoing productivity of CRA fisheries, and include mitigation measures to avoid or reduce serious harm to fish, offsetting measures (i.e., rock reefs) to counterbalance potential losses in fisheries productivity, and monitoring measures to ensure mitigation measures are effective and that the authorized works, undertakings or activities are carried out in compliance with the conditions of the authorization and the *Fisheries Act*. Monitoring and reporting for offsetting measures is also required within the conditions of the authorization over a 10-year period, to ensure that the rock reef offsets are constructed in accordance with design specification, and in a manner that minimizes impacts to fish and fish habitat, and ensure that the habitat is productive, and functioning as intended.

The conditions of the authorization also require reporting and engagement with Indigenous groups. Condition 6.0 of the authorization requires that the Proponent share monitoring reports required under the authorization with the IAMC, and respond to concerns raised by the IAMC. This could be done in writing or through meetings if required. Where monitoring indicates non-compliance with conditions of the authorization or the *Fisheries Act*, the Proponent is required to identify remedial actions and provide this information in a report to DFO and the IAMC in a timely manner.

#### ***Indigenous Consultation:***

Since March 2, 2017, DFO has been consulting with 33 potentially affected Indigenous groups on the Proponent's Application for Authorization and the Addendum, including TWN, Squamish Nation, Musqueam, Stó:lō communities (24 individual groups), and Hul'qumi'num communities (six individual groups). The preliminary assessment of depth of consultation for each group was carried forward from the Crown's preliminary strength of claim assessment during the EA process for the TMX Project, which was documented within Indigenous group-specific appendices of the *Joint Federal/Provincial Consultation and Accommodation Report for the Trans Mountain Expansion Project (CAR)*. DFO's approach to consultation is detailed in the *Consultation Plan (Annex D)*.

Amongst the 33 Indigenous groups identified for consultation, three were identified as being owed a level of consultation ranging from the moderate to higher end of the consultation

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spectrum: Squamish Nation (moderate), Musqueam (moderate), TWN (deep). The remaining 30 Indigenous groups that are part of the Stó:lō and Hul'qumi'num communities were identified as being owed a lower depth of consultation.

Since commencing consultation in March 2017, DFO has received responses and engaged in more specific correspondence with eight groups, these being TWN, Musqueam, Halalt First Nation, Katzie First Nation, Kwikwetlem First Nation, Kwantlen First Nation, Cowichan Tribes, and Lyackson First Nation. The remaining Indigenous groups have not engaged in consultation with DFO.

The Department opted to engage in consultation at a depth commensurate to the level at which individual groups wanted to engage in. Halalt First Nation, Katzie First Nation, Kwantlen First Nation, Kwikwetlem First Nation and Lyackson First Nation were initially assessed by DFO as being owed a low depth of consultation, however as result of the level of engagement from these groups DFO engaged on the deeper end of the consultation spectrum, providing copies of the draft conditions of authorization, the Application for Authorization, and the Addendum, and in some cases offered to travel to individual communities to meet in-person and discuss the content of the Application of Authorization, the Addendum, and any associated concerns. Thus, DFO strived to meaningfully consult with individual Indigenous groups to the extent and depth that each group wished to engage in consultations with DFO. More detailed information on consultation activities conducted to-date and associated outcomes of consultation is available in the Consultation Summary Report (**Annex E**).

Key issues raised by potentially affected Indigenous groups during consultation activities included:

- potential effects on fishing and harvesting (e.g., Dungeness crab and rock fish);
- potential infringement of fishing rights;
- potential effects on fisheries productivity within the designated Rockfish Conservation Area at the location of the Westridge Marine Terminal, including the cumulative effects of increased industrialization in the Burrard Inlet;
- the effects of increased wave wake on nearshore fish habitats and the potential for increased shoreline erosion;
- the effects of increased underwater noise from project-related vessels on Southern Resident Killer Whales; and
- the risk of oil spills.

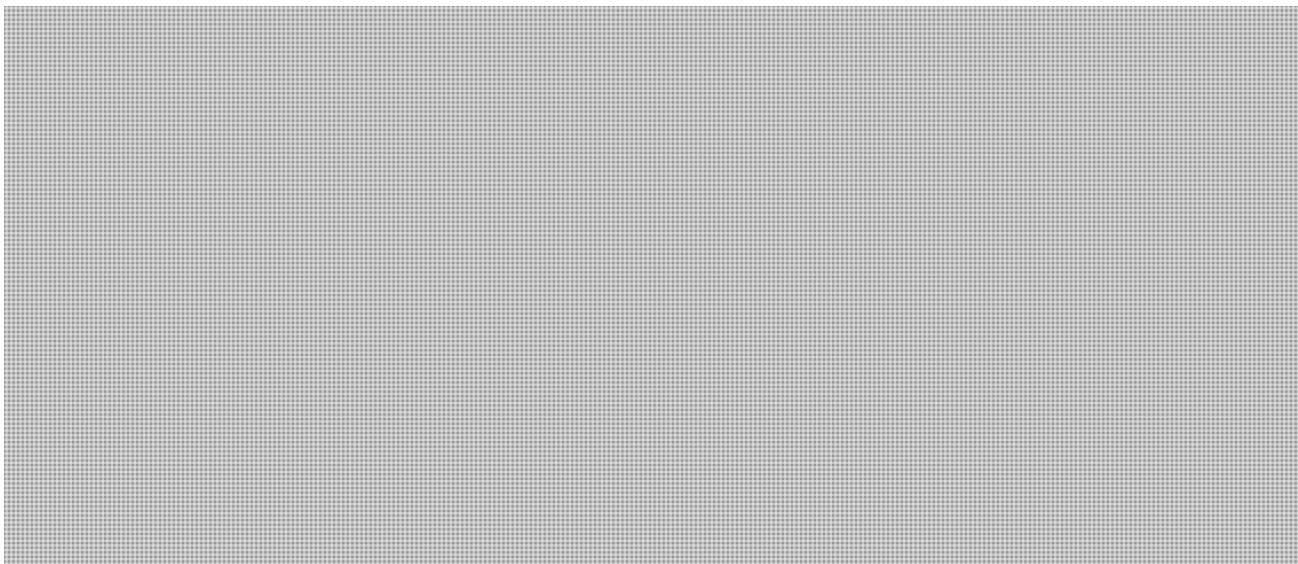
Where possible, DFO has aimed to address the concerns raised by potentially affected Indigenous groups within conditions of a potential *Fisheries Act* authorization. For example, Musqueam's concern regarding impacts of adverse weather conditions during construction on water turbidity was addressed through Condition 2.2.10 (**Annex A**) which requires the Proponent to suspend all works, undertakings or activities during specified severe weather conditions. Halalt First Nation's concerns regarding the monitoring of mitigation measures and the implementation of contingency measures was addressed in Conditions 2.2.11- 2.2.12.

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As indicated above, three Indigenous groups were identified as being owed a level of consultation ranging from the moderate to higher end of the consultation spectrum: Musqueam (moderate), Squamish Nation (moderate), and TWN (deep). The remaining 30 Indigenous groups were identified as being owed a lower depth of consultation.

Musqueam has an established Aboriginal right to fish for food, social and ceremonial (FSC) purposes as set out in the Supreme Court of Canada *Sparrow* decision. Approximately 44 kilometres of the marine shipping route would pass within the northwestern part of Musqueam's traditional territory. The Westridge Marine Terminal is located in the eastern portion of Burrard Inlet, an area that would fall outside of the Musqueam's historic use. However, many ethnographers identify the areas along the western section of the Burrard Inlet and along the portion of the Strait of Georgia as areas that were used for resource gathering by the Musqueam.



The CAR indicated that TMX Project construction and marine shipping would have negligible to minor impacts on Squamish Nation's hunting, trapping and plant gathering activities. The CAR also indicated that the terminal expansion and increase in marine shipping would have minor impacts on Squamish Nation's marine fishing and harvesting activities and minor impacts on traditional and cultural activities. The CAR also recognized that Proponent commitments, NEB conditions and existing pipeline and safety regimes would only partially address ongoing burdens and risks. However, despite DFO's attempts to consult with Squamish Nation, they have not responded.



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TWN's reserve is located directly across from the terminal in North Vancouver. TWN specifically raised the following issues:

- The area of and around the proposed terminal expansion is identified by TWN as important and sensitive fisheries habitat (especially for rockfish and Dungeness crabs), in addition to being a culturally important area;
- TWN asserts that it has Aboriginal rights and interests in eastern Burrard Inlet and, as a result, TWN consent is required prior to any authorizations granted by DFO or, alternatively, the Crown is required to justify any infringements that would occur as a result of the issuance of any authorizations;
- Construction and operation of the terminal expansion will impair TWN's right to safe, unobstructed travel throughout Burrard Inlet due to the increase in Project-related marine vessel traffic;
- Expansion of the marine terminal water lot lease will set back or eliminate progress that TWN has made in restoring Burrard Inlet and set back TWN's efforts to increase the availability of marine foods for harvest. Potential impacts to rockfish and Dungeness crab habitat and populations are of particular concern; and
- TWN is requesting the right of first refusal (from the Vancouver Fraser Port Authority) within the proposed expanded area of the terminal water lot lease, as the TWN wishes to acquire the submerged lands for stewardship and for the purposes of harvesting rockfish and Dungeness crab.

With the intent of accommodating potential residual impacts to the harvesting activities of Indigenous groups, including the TWN, the Department developed options for a draft condition of authorization that would require the development and implementation of supplementary measures. The purpose of these measures would be to create, restore or enhance fish habitat to help increase fisheries productivity to benefit Indigenous FSC harvesting and offset potential impacts to harvesting opportunities from the proposed terminal expansion. The supplementary measures would align with the priorities identified in TWN's *Burrard Inlet Action Plan*.

On July 18, 2017, DFO sent a letter to TWN seeking TWN's views in regards to potential supplementary habitat restoration measures that may be required as a condition of the authorization, and which would address TWN's conservation and restorations priorities identified in TWN's *Burrard Inlet Action Plan*. On August 17, 2017, TWN responded in writing indicating that a *Fisheries Act* authorization is not a proper venue to advance the *Burrard Inlet Action Plan*. The TWN state that elements of the plan should instead be addressed through the Canada-TWN reconciliation agreement under development between TWN and Department of Indigenous and Northern Affairs (INAC). In that forum, TWN believe funding and implementation of the plan can be implemented on a nation-to-nation basis.



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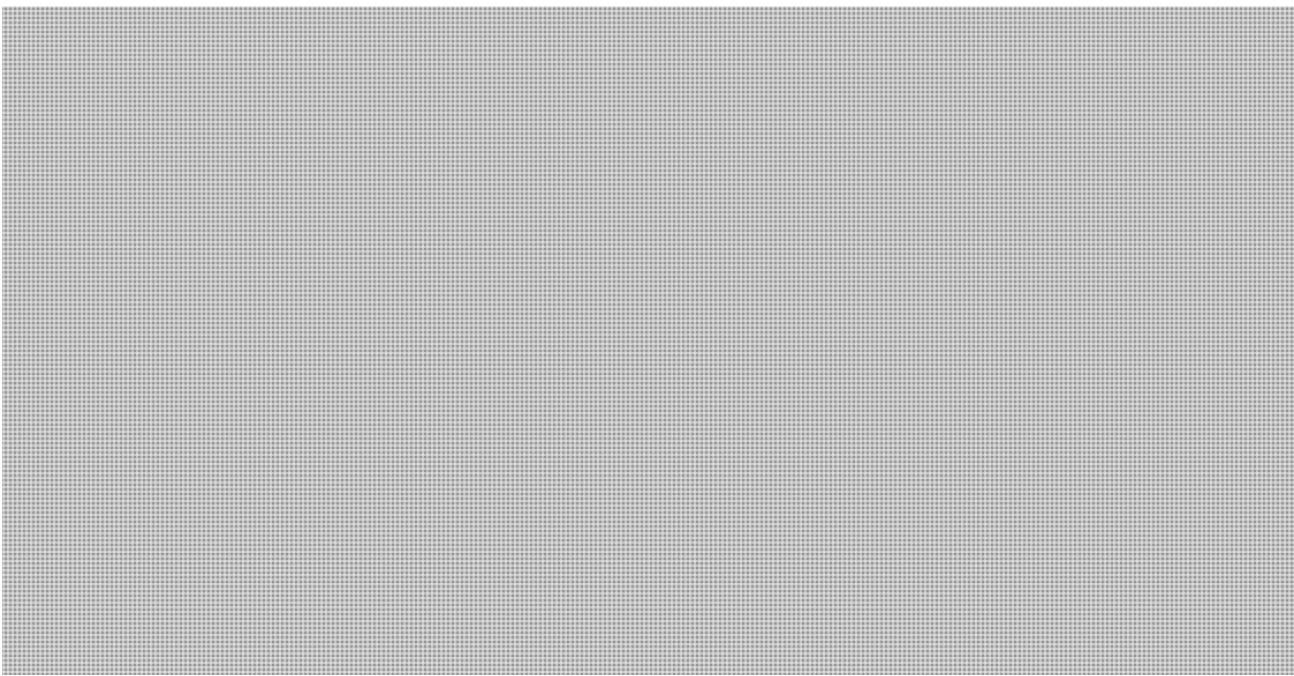
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On August 24, 2017, DFO officials expressed the view that the supplementary measures should not be included in the authorization (should it be issued) in keeping with the TWN's request. DFO will continue to work to determine an approach to address the TWN's restoration priorities using avenues other than the authorization or the Canada-TWN reconciliation agreement.

In addition to addressing TWN's restoration priorities and other Indigenous groups' concerns in ways other than through the authorization, DFO is relying on a variety of measures and actions that have been informed through consultations with Indigenous groups and through DFO's participation in the EA process to minimize or accommodate impacts to asserted or established Aboriginal or treaty rights, and minimize impacts to fish and fish habitat, that result from the terminal expansion and TMX Project. These measures and actions include:

- 1) ***Fisheries Act Authorization*** conditions, which will require avoidance, mitigation, monitoring, offsetting, reporting and engagement with Indigenous groups to help ensure the sustainability and ongoing productivity of CRA fisheries; for example, Condition 6.0 has been included to increase the participation of Indigenous groups (through the IAMC) in DFO's regulatory processes, encourage transparency in the Proponent's and DFO's monitoring and reporting, and provide a framework for added accountability on the part of the Proponent;
- 2) **Indigenous Advisory and Monitoring Committee (IAMC)**, which was established as a project-specific accommodation measure subsequent to the EA. The IAMC will review, monitor and advise on environmental, safety and socioeconomic issues throughout the project life cycle;
- 3) **Mutual Benefit Agreement offers by the Proponent to Indigenous groups**, which are

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intended to address potential concerns and impacts to asserted or established Aboriginal or treaty rights (**Annex G**);

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- 4) **Oceans Protection Plan** and initiatives included in the plan (e.g., the Coastal Restoration Fund and achieving a world-leading marine safety system) (**Annex H**);
- 5) **National Energy Board Certificate Conditions** (**Annex I**);
- 6) **British Columbia Environmental Assessment Certificate Conditions** (**Annex J**);
- 7) **Trans Mountain's Commitments Tracking Table** and relevant commitments outlined therein, which address potential impacts from the proposed terminal expansion (**Annex K**);
- 8) **The Joint Federal/Provincial Consultation and Accommodation Report for the Trans Mountain Expansion Project (CAR)** (**Annex L**); and
- 9) **Measures undertaken by the Vancouver Fraser Port Authority (VFPA)** that may serve to address impacts to asserted or established Aboriginal or treaty rights, some of which will be included in the VFPA's conditions of permit for the proposed Westridge Marine Terminal expansion.

In consideration of the various instruments and initiatives described above, DFO's attempts at meaningful consultation over the past six months, [REDACTED]

[REDACTED] the Department is of the view that the procedural aspect of Indigenous consultation has been adequate [REDACTED]. Once a decision is made, DFO will notify the 33 Indigenous groups involved in the consultation process of the Department's decision on whether to issue an authorization to the Proponent for the works, undertakings or activities associated with the proposed expansion of the Westridge Marine Terminal.

#### ***Fisheries Act Section 6 Factors:***

Prior to making a decision on the proposed issuance of an authorization under Paragraph 35(2)(b) of the *Fisheries Act*, the Minister must consider the four factors set out in Section 6 of the Act. The Checklist for Consideration of the Factors set out in Section 6 of the *Fisheries Act* has been completed (**Annex F**) and is summarized below:

1. **The contribution of the fish to the ongoing productivity of commercial, recreational and Indigenous fisheries (CRA) fisheries.** Through its review of the proposed works, undertakings or activities, DFO has assessed potential impacts to fish that are part of CRA fisheries (see **Annex B**, the Localized Effects Assessment Documentation Record).
2. **Fisheries Management Objectives (FMOs).** Through its regulatory review process,

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DFO has considered the objectives of the *Fisheries Protection Policy Statement*, DFO's *Rockfish Conservation Strategy*, *Canada's Policy for the Conservation of Wild Pacific Salmon*, and the *Crab by Trap 2017, Pacific Region – Integrated Fisheries Management Plan*. The proposed works, undertakings or activities are anticipated to affect the ability of the Department to achieve the objectives of the aforementioned policies and plans; however, with the implementation of proposed avoidance, mitigation and offsetting measures, effects on fish and fish habitat will be minimized or offset such that progress towards achieving the FMO objectives will not be compromised.

3. **Whether there are measures and standards to avoid, mitigate or offset serious harm to fish that are part of a CRA fishery, or that support such a fishery.** Measures to avoid serious harm to fish were incorporated into project engineering and design considerations. Standard mitigation and offsetting measures that are technically and biologically feasible are proposed to minimize and offset impacts to fish and fish habitat. Measures to mitigate and offset serious harm to fish are required as part of the conditions of the *Fisheries Act* authorization, and are described above and in detail within the Localized Effects Assessment Documentation Record (**Annex B**) and the Summary of Offsetting (**Annex C**).
4. **The public interest.** Public input was provided during the NEB hearings by Intervenors, and through the *Report from the Ministerial Panel for the Trans Mountain Expansion Project*. No public consultation was conducted during this regulatory review process as there is no requirement to do so. However, members of the public have expressed their views regarding the TMX Project as a whole in letters and emails to the Minister of Fisheries and Oceans Canada and other senior departmental officials. No new information has been provided in correspondence from the public during the regulatory stage that has not already been considered during the EA phase. Issues raised have largely related to the effects of the TMX Project at pipeline watercourse crossings, the potential for oil spills, and the potential for effects to SRKW from increased project-related marine vessel traffic. With the implementation of avoidance, mitigation and offset measures, DFO is of the view that the issuance of the requested authorization will provide for the ongoing sustainability and productivity of CRA fisheries.

#### **Options - Issue or Deny the Requested Authorization:**

In providing this recommendation, and throughout the regulatory review and consultation process associated with making this decision, the options to issue or deny issuance of a *Fisheries Act* authorization have been thoroughly considered.

As detailed in the considerations above, there is a basis for issuing the requested authorization. DFO has completed its regulatory review of the Application for Authorization and the Addendum, and determined that potential impacts to fish and fish habitat from the proposed works, undertakings and activities can be avoided or mitigated using standard mitigation measures, and that the offsetting proposed is technically and biologically feasible and anticipated

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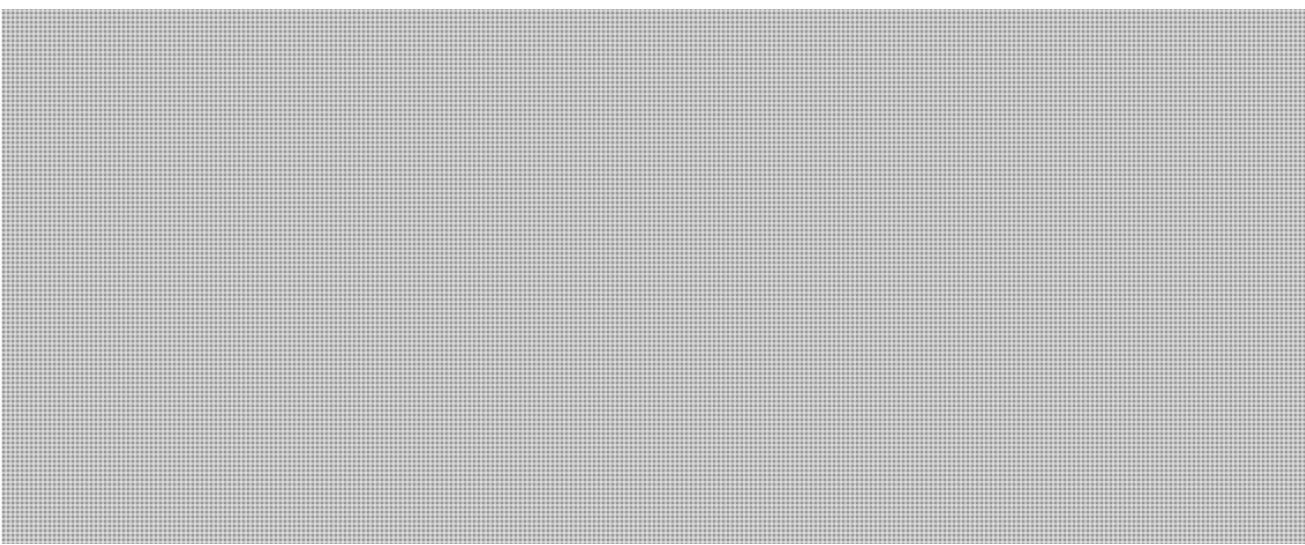
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to more than counterbalance any residual serious harm to fish. DFO has considered the four factors in section 6 of the *Fisheries Act* and is of the view that issuance of the requested authorization will provide for the sustainability and ongoing productivity of CRA fisheries. The Department provided potentially affected Indigenous groups meaningful opportunities to provide input on the Application for Authorization, the Addendum, the draft conditions of authorization, and DFO's contemplated Crown conduct (i.e., the potential issuance of a *Fisheries Act* authorization) for the proposed terminal expansion. DFO is of the view that the potential adverse impacts of the proposed terminal expansion on asserted or established Aboriginal or Treaty rights are low after mitigation, offsetting, and accommodation measures are considered.



### **INTRADEPARTMENTAL CONSULTATIONS**

The Fisheries Protection Program has also consulted with Fisheries and Aquaculture Management to identify Indigenous groups that hold fishing licences in Burrard Inlet.

### **INTERDEPARTMENTAL CONSULTATIONS**

DFO has been coordinating Indigenous consultation efforts with the Vancouver Fraser Port Authority (VFPA) to the extent possible. VFPA is currently undertaking its own review of the proposed expansion of the Westridge Marine Terminal as the Proponent has submitted a permit application to VFPA for this expansion. The Proponent has also submitted an application to VFPA for an amendment to its water lot lease to increase the area of the lease to accommodate the proposed expansion of the terminal.

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DFO and VFPA jointly met with TWN on May 12, 2017 and Musqueam on June 8, 2017 to minimize time and resourcing burdens on these Indigenous groups. DFO and VFPA have been in communication frequently during our respective regulatory review processes, sharing information and mutually relying on offsetting and/or accommodation measures each may be implementing to mitigate or accommodate adverse impacts to Indigenous group's asserted or established Aboriginal or treaty rights. DFO and VFPA are also attempting to coordinate the timing of decision-making for their respective authorization/permitting decisions.

s.21(1)(b) DFO has been in communication with Transport Canada to further DFO's understanding of relevant Oceans Protection Plan initiatives and how these initiatives may mitigate or address potential impacts to Indigenous rights (e.g., fishing rights) from project-related marine shipping activities.

### **EXTERNAL CONSULTATIONS**

As part of the Governor-in-Council's approval of the TMX Project, the Government of Canada committed \$64.7 million in funding for an Indigenous Advisory and Monitoring Committee (IAMC) that will work with federal regulators to review and monitor environmental, safety and socio-economic issues throughout the project lifecycle. In July 2017, the IAMC was formally established and DFO is participating as a member on the committee. Should an authorization be issued for the proposed terminal expansion, the IAMC would be involved in supporting monitoring activities associated with the authorization, including reviewing monitoring reports, conducting site visits, and providing advice to DFO and the Proponent on potential issues of compliance with the authorization or the *Fisheries Act*. Through the regulatory review process, DFO engaged with the IAMC Co-Development Working group, providing information on the proposed works, undertakings or activities, and mitigation and offsetting measures. DFO sought input from this working group when drafting the conditions of authorization.

### **RECOMMENDATIONS TO REGIONAL DIRECTOR GENERAL**

A decision on whether to issue the Authorization under Paragraph 35(2)(b) of the *Fisheries Act* is required. Thus, given that DFO:

- considers Indigenous consultation complete [REDACTED]
- is of the view that the potential adverse impacts of the proposed terminal expansion on asserted or established Aboriginal or Treaty rights are low after mitigation, offsetting, and accommodation measures are considered;
- has completed its regulatory review of the Application for Authorization and the Addendum, and determined that potential impacts to fish and fish habitat from the proposed works, undertakings and activities can be avoided or mitigated using standard mitigation measures, and that the offsetting proposed is technically and biologically feasible and anticipated to more than counterbalance any residual serious harm to fish;

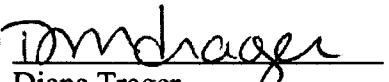
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**SOLICITOR-CLIENT PRIVILEGE**  
**LITIGATION PRIVILEGE**

- is requiring legally binding conditions within the *Fisheries Act* Authorization that aim to mitigate impacts to fish and fish habitat, offset any residual serious harm to fish and accommodate Aboriginal rights and/or interests through integration with the IAMC; and
- has considered the four factors in section 6 of the *Fisheries Act* and is of the view that issuance of the requested authorization will provide for the sustainability and ongoing productivity of CRA fisheries,

it is recommended that the Regional Director General issue the Authorization under Paragraph 35(2)(b) of the *Fisheries Act*.

Should you concur with this recommendation, please sign the attached Considerations Under Section 6 of the *Fisheries Act* document (**Annex F**), the attached cover letter (**Annex M**), the Authorization Approval form (**Annex N**), and issue the Authorization under Paragraph 35(2)(b) of the *Fisheries Act* (**Annex A**) for works, undertakings or activities associated with the proposed Westridge Marine Terminal Expansion to Trans Mountain Pipeline ULC.



Diana Trager

A/Regional Director, EMB Pacific Region

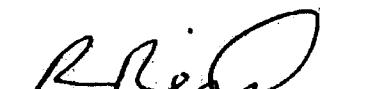


I concur with the recommendations



I do not concur with the recommendations

**SEP 08 2017**



Rebecca Reid

Regional Director General

Regional Director General's Comments:

.../17

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**SOLICITOR-CLIENT PRIVILEGE**

**LITIGATION PRIVILEGE**

s.21(1)(b)

s.23

**Attachments (16):**

- Annex A      Fisheries Act Authorization – Westridge Marine Terminal Expansion (17-HPAC-00071)
- Annex B      Localized Effects Assessment Documentation Record (LEADR) – Trans Mountain Expansion Project Westridge Marine Terminal Expansion
- Annex C      Summary of Offsetting - Westridge Marine Terminal Expansion
- Annex D      Indigenous Consultation Plan - Westridge Marine Terminal Expansion
- Annex E      Consultation Summary Report - Westridge Marine Terminal Expansion, Trans Mountain Expansion Project
- Annex F      Consideration of Factors set out in Section 6 of the *Fisheries Act*
- Annex G      Existing and ongoing offers by the Proponent
- Annex H      Canada's Oceans Protection Plan
- Annex I      Trans Mountain Expansion Project – NEB Certificate Conditions
- Annex J      Trans Mountain Expansion Project – BC Environmental Assessment Certificate Conditions
- Annex K      Trans Mountain Expansion Project – Commitment Tracking Table (Version 5 – July 14, 2017).
- Annex L      Joint Federal/Provincial Consultation and Accommodation Report for the Trans Mountain Expansion Project
- Annex M      *Fisheries Act* Authorization Cover Letter
- Annex N      Request for Approval of *Fisheries Act* Authorization
- Annex O      [Redacted]
- Annex P      Order in Council P.C. 2016-1069, issued on November 29, 2016 (Extract)



Fisheries and Oceans Canada  
Correspondence Routing Slip

Fiche d'acheminement de correspondance  
Pêches et Océans Canada

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LITIGATION PRIVILEGE

GCCMS #: 2017-505-00067

EKME #: 3824806

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To: Rebecca Reid Date:  
Pour:

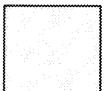
Object: **TRANS MOUNTAIN EXPANSION PROJECT APPLICATION FOR**  
Objet: **FISHERIES ACT, 35(2)(B) AUTHORIZATION FOR WESTRIDGE MARINE**  
**TERMINAL EXPANSION**

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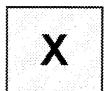
From / Diana Trager, A/RD EMB Pacific  
De:

Additional approvals:

Autre(s) approbation(s):



Material for the Minister  
Documents pour le Ministre



Your Signature  
Votre signature



Information

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Screen: The Department has assessed this issue in full.

Filtre:

- It contains no reference to matters covered by the screen relating to J.D. Irving Limited.
- It contains matters referenced in the screen relating to J.D. Irving Limited, but in our view does not engage the screen.
- In our view, the screen relating to J.D. Irving Limited should be engaged.

Remarks: This briefing note was developed in consultation with the following

Remarques: regions/sectors:

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Distribution: Please indicate name of people to receive a copy and if prior or following the DM approval.

Philippe Morel, ADM Aquatic Ecosystems

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Drafting Officer/  
Rédacteur:

TRACEY SANDGATHE 604-666-0129/Diana Trager/SP



## **PARAGRAPH 35(2)(b) FISHERIES ACT AUTHORIZATION**

### **Authorization issued to:**

Trans Mountain Pipeline ULC (hereafter referred to as the “Proponent”)

Attention to: David Safari, VP Execution TMEP

Trans Mountain Pipeline L.P., by its general partner  
Trans Mountain Pipeline ULC  
300 – 5 Avenue SW., Suite 2700,  
Calgary, AB T2P 5J2 Canada

### **Location of Proposed Project**

Nearest community (city, town, village): Burnaby  
Municipality, district, township, county: Metro Vancouver  
Province: British Columbia  
Name of watercourse, waterbody: Burrard Inlet  
Longitude and latitude, UTM Coordinates: 49°17'22.15" N and 122°57'16.09" W

### **Description of Proposed Project**

The proposed project described here-in involves construction of the Westridge Marine Terminal Expansion in Burnaby, B.C., which is one component of the larger Trans Mountain Expansion Project. Expansion of the Westridge Marine Terminal will increase the berthing capacity of the existing terminal from one berth to three vessel berths.

The proposed project, of which the authorized works, undertakings or activities are a part involves:

- Land-based site preparation, including clearing of marine riparian vegetation;
- Installation of a bulkhead wall, which will be constructed through excavation of existing shoreline riprap, linear installation of circular sheet-pile cells to form the bulkhead wall, and infilling of the shoreline area behind the bulkhead wall to accommodate new onshore infrastructure;
- Installation of permanent piles for the construction of three new loading berths, access trestle, utility dock, and foam water supply pump house platform;
- Placement of concrete anchor blocks to secure marine containment booms;
- Decommissioning and removal of the existing small utility dock;
- Installation of temporary template piles to support the placement and installation of permanent piles, and installation of temporary working piles to support a marine construction office and foreshore construction;
- Marine riparian clearing for construction of the marine construction office;
- Placement of temporary marine anchors for securing the marine construction safety boom, and installation of concrete anchor blocks to anchor the turbidity curtain;

- Excavation of additional rip-rap within an area extending 5 m seaward of the bulkhead wall for the installation of sheet pile cells, followed by replacement of the excavated rip-rap over the same area;
- Installation of surface water runoff outfall pipes and rip-rap placement to support and armour the outfall pipes; and
- Construction and operation of marine water intakes which will be enclosed within a fish screen, along with excavation and placement of rip-rap beneath footprint of fish screen.

#### **Description of Authorized works, undertakings or activities**

**The works, undertakings, or activities associated with the proposed project that are subject of this Authorization are:**

- Installation of an approximately 363 m long bulkhead wall constructed via:
  - excavation of existing shoreline rip-rap and foreshore substrates;
  - installation of circular sheet pile cells to form the wall; and
  - in-filling within the circular sheet pile cells and backfilling of the area between the existing shoreline at the terminal and the bulkhead wall.
- Installation of permanent piles for the construction of three new loading berths, an access trestle, a utility dock, and a foam water supply pump house platform;
- Installation of working piles in the upper intertidal zone to support a marine construction office; and
- Installation of a surface water run-off outfall at the western end of the terminal foreshore expansion within the upper intertidal zone.

**The serious harm to fish likely to result from the proposed works, undertakings, or activities, and covered by this Authorization (also see Schedule B, Figure 1) is:**

- Destruction of **4,196 m<sup>2</sup>** of intertidal rocky habitat from installation of the bulkhead wall and infilling behind the bulkhead wall to the shoreline;
- Destruction of **1,266 m<sup>2</sup>** of subtidal rocky habitat from infilling behind the bulkhead wall to the shoreline;
- Destruction of **455 m<sup>2</sup>** subtidal soft-sediment habitat from installation of permanent piles;
- Permanent alteration of **217 m<sup>2</sup>** of intertidal rocky habitat and **328 m<sup>2</sup>** of subtidal rocky habitat to soft sediment habitat from excavation of riprap prior to installation of the bulkhead wall;
- Permanent alteration of **3 m<sup>2</sup>** of intertidal habitat from the installation of working piles to support the marine construction office; and
- Permanent alteration of **113 m<sup>2</sup>** of intertidal mixed substrate habitat from installation of a surface water run-off outfall pipe at the western end of the terminal foreshore expansion.

## General Considerations

If information contained in the documents listed in Schedule A is in conflict with the Conditions of the Authorization, the Conditions of Authorization shall prevail over the information in the aforementioned documents.

Unless otherwise specified, all correspondence provided to DFO in relation to this Authorization shall be submitted via email to [ReferralsPacific@dfo-mpo.gc.ca](mailto:ReferralsPacific@dfo-mpo.gc.ca) or by mail to:

Triage & Planning Unit  
Fisheries Protection Program  
Ecosystem Management Branch  
Fisheries and Oceans Canada  
200 - 401 Burrard Street  
Vancouver, British Columbia V6C 3S4

## Conditions of Authorization

The above described works, undertakings or activities must be carried on in accordance with the following conditions:

### 1. Conditions that relate to the period during which the works, undertakings or activities can be carried on:

The works, undertakings or activities are authorized to be carried on during the following period:

From: Date of issuance                          To: December 31, 2020

If the Proponent cannot complete the works, undertakings or activities during this period, the Proponent must notify Fisheries and Oceans Canada (DFO) 30 days in advance of the expiration of the above time period.

The periods during which other conditions of this Authorization must be complied with are provided in their respective sections below. The proponent must notify DFO 30 days in advance of any relevant expiration dates if a given condition cannot be met within the set timeframe.

### 2. Conditions that relate to measures and standards to avoid and mitigate impacts to fish and fish habitat:

- 2.1 The Proponent shall ensure that the location and design of the works, undertakings or activities are consistent with the information included in the documents titled, "*Trans Mountain Expansion Project Westridge Marine Terminal Application for Authorization under Paragraph 35(2)(b) of the Fisheries Act*", prepared for Kinder Morgan Canada Inc. by Stantec Consulting Ltd., and dated February 1, 2017 (hereafter 'the Application') and "*Addendum to Westridge*

*Marine Terminal Application for Authorization under Paragraph 35(2)(b) of the Fisheries Act*", prepared for Kinder Morgan Canada Inc. by Stantec Consulting Ltd., and dated June 16, 2017 (hereafter 'the Addendum'), and other information and documentation included in Schedule A of this Authorization.

2.2 The Proponent shall implement the measures and standards described below and those included in the documents identified in Schedule A to avoid or mitigate impacts to fish and fish habitat:

- 2.2.1 Effective sediment and erosion control measures (e.g., a turbidity curtain, etc.) shall be implemented before starting construction and shall be maintained during construction activities, as appropriate, to avoid the deposit and dispersion of sediment into the marine environment.
- 2.2.2 Water intakes of any pumps shall be designed and screened in accordance with specifications outlined in the Addendum, Fisheries and Oceans Canada's *Freshwater Intake End-of-Pipe Fish Screen Guidelines* (Fisheries and Oceans Canada 1995), and Fisheries and Oceans Canada's *Guidelines for Minimizing Entrainment and Impingement of Aquatic Organisms at Marine Intakes in British Columbia* (Fisheries and Oceans Canada 1991).
- 2.2.3 Fish salvage and relocation shall be conducted, as appropriate, prior to the start of construction activities so as to avoid and minimize adverse impacts to fish.
- 2.2.4 Disturbed riparian areas shall be replanted as appropriate, with native non-invasive species of vegetation.
- 2.2.5 Temporary structures installed below the high-water mark shall be decommissioned and removed when they are no longer being used for construction purposes.
- 2.2.6 All nearshore in-water Project construction activities (within a 50-m horizontal distance seaward of the higher high water large tide level) at the Westridge Marine Terminal shall only be carried out during a work timing window from **August 16 to March 15 each year**, as described in the Memo from Trans Mountain Pipeline ULC to DFO, dated August 3, 2017 (Schedule A). This work timing window will allow additional time beyond the Burrard Inlet least risk timing window (August 16 – February 28) for the Proponent to conduct the works, undertakings or activities authorized here-in, while avoiding periods of spawning by herring, higher local abundance of finfish and invertebrates, and the timing and/or location of their sensitive life processes (e.g., out-migrating juvenile salmon).
- 2.2.7 In-water construction activities must cease if any marine mammal is observed adjacent to or within the project area such that there is risk of direct physical harm to the marine mammal. Construction activities may only resume once the marine mammal has been confirmed to have left the immediate area or has not been sighted for 30 minutes.
- 2.2.8 A vibratory hammer will be used for pile driving where practical and feasible, and all in-water pile driving activities will be monitored via hydrophone to ensure underwater peak pressures do not result in adverse impacts to fish. Appropriate mitigation measures (e.g., bubble-curtains) shall be implemented during pile driving activities to avoid adverse impacts to fish.
- 2.2.9 The following measures specifically relate to impact pile driving activities:

- 2.2.9.1 To avoid death of fish, mitigation measures (e.g., bubble curtain around the full wetted length of the pile, fish exclusion, etc.) must be implemented.
- 2.2.9.2 Monitoring via underwater noise recordings must be conducted continuously and within 10 meters of the pile being driven to verify that underwater sounds do not exceed the 30 kPa (209.5 dB re: 1 µPa) threshold for injury to finfish.
- 2.2.9.3 Outside of the least risk windows for Burrard Inlet (August 16 – February 28), a more conservative underwater sound threshold of 22.5 kPa (207 dB re: 1 µPa) will be adhered to, and monitored, to prevent injury to finfish. If sound levels exceed this threshold, or a fish kill is observed despite mitigation measures being in place, pile driving activities are to cease immediately and mitigation methods are to be reviewed and modified in consultation with DFO.
- 2.2.9.4 Upon commencement of pile driving, or recommencement after a delay of 30 minutes or more, pile installation shall ramp-up by starting with less frequent impact strikes of lower force. This ramp-up period is designed to enable any fish that may be in the area time to leave the area prior to the generation of peak pressure and noise levels for pile installation.
- 2.2.9.5 Prior to commencement of pile driving, or recommencement after a delay of 30 minutes or more, visual monitoring must be conducted to determine if marine mammals are present within an exclusion zone of 1 km (except for harbor seals, which will have an exclusion zone of 150 m).
- 2.2.9.6 Work may only commence if marine mammals and harbor seals are not observed in their respective exclusion zones for 30 minutes.
- 2.2.9.7 Exclusion zones must be monitored continuously during impact pile driving. If a marine mammal or marine mammals are observed within their respective exclusion zone, pile driving activities must cease until all marine mammals leave their respective exclusion zone or they have not been sighted for 30 minutes within their respective exclusion zone.
- 2.2.9.8 If underwater noise recordings reveal that the threshold of 160 dB is exceeded at the 1 km exclusion zone boundary, the exclusion zone radius must be widened to a new outer limit, where sound recordings demonstrate that the 160 dB threshold is not exceeded. Conditions 2.2.9.5 to 2.2.9.7 will need to be complied with within this new exclusion zone.
- 2.2.9.9 Pile driving may only be carried out during daylight hours to enable effective visual monitoring of marine mammal exclusion zones.
- 2.2.10 A turbidity curtain must be used to isolate the work area during the excavation of riprap in order to contain marine sediment suspended in the water column and limit the extent of sediment dispersion. During severe weather conditions (e.g., > 70 km/h winds, or fog), works, undertakings or activities that may affect the effectiveness of the turbidity curtain must be suspended.
- 2.2.11 If the monitoring measures required in Condition 3 below indicate that the measures and standards to avoid and mitigate impacts to fish and fish habitat are not effective, the Proponent must identify and implement contingency measures to avoid or limit residual effects on fish and fish habitat to the serious harm authorized here-in.

2.2.12 In the event that monitoring indicates that the contingency measures implemented by the Proponent are not effective at preventing serious harm beyond that authorized in this Authorization, the Proponent must provide a report to DFO (refer to Condition 3 for reporting requirements) and the Trans Mountain Expansion Project (TMX) Indigenous Advisory and Monitoring Committee (the IAMC), which details the outstanding issues affecting fish and fish habitat, reasons for failure of the measures implemented, and any potential alternate solutions to address outstanding issues.

**3. Conditions that relate to monitoring and reporting of the measures and standards to mitigate or avoid impacts to fish and fish habitat:**

3.1 A qualified environmental professional must be on-site during the carrying on of in-water works, undertakings and activities, and shall monitor the works, undertakings or activities on a systematic and on-going basis to ensure that the standards and avoidance measures to avoid impacts to fish and fish habitat are effective, and that unauthorized impacts to fish and fish habitat are avoided.

3.2 The Proponent shall monitor the avoidance and mitigation measures referred to in Condition 2 of this Authorization and submit monthly construction monitoring reports to DFO for the duration of the works, undertakings or activities. The construction monitoring reports must indicate whether the measures and standards to avoid and mitigate impacts to fish and fish habitat were conducted according to the conditions of this Authorization. This shall be done, by providing:

3.2.1 A concise summary of the works, undertakings or activities carried out during that reporting period.

3.2.2 Commentary on the works, undertakings or activities, and the work area from an environmental perspective (e.g., fish and marine mammal observations, weather, tides, water quality, etc.).

3.2.3 Dated photographs, underwater noise measurements, and inspection reports to demonstrate whether the mitigation measures and standards described in Condition 2 are effectively being implemented and functioning to limit the serious harm to fish to what is covered by this Authorization.

3.2.4 Photographic documentation and a succinct summary of any environmental issues (e.g., potential non-compliance events) or impacts that arose or occurred in relation to fish and fish habitat, and details of any contingency measures that were taken to prevent impacts greater than those covered by this Authorization in the event that mitigation measures did not function as intended.

3.2.5 A summary of compliance with relevant Environmental Protection Plans (EPPs) pertaining to fish and fish habitat.

3.2.6 A table summarizing unforeseen issues with respect to fish and fish habitat that remain outstanding and must be addressed (i.e., those without on-the-spot solutions or those requiring follow-up to ensure corrective measures are being taken), proposed/planned mitigation measures, priority and anticipated dates of implementation and/or completion.

3.3 The Proponent shall provide a post-construction monitoring report to DFO within 90 days of completion of the works, undertakings and activities and indicate whether the works,

undertakings and activities were conducted according to the conditions of this Authorization by providing ‘as-built’ drawings, dated photographs, and a summary of the completed works, undertakings or activities (including any issues that arose pertaining to fish and fish habitat and how these issues were addressed).

- 3.4 If monitoring indicates that works, undertakings, or activities will result or are resulting in unauthorized serious harm to fish, the Proponent has a duty to notify DFO immediately. The Proponent will report any unauthorized serious harm to DFO’s Observe, Record, and Report line (1-800-465-4336).
- 3.5 All monitoring reports are to be submitted to [ReferralsPacific@dfo-mpo.gc.ca](mailto:ReferralsPacific@dfo-mpo.gc.ca), referencing DFO file: **17-HPAC-00071**.

#### **4. Conditions that relate to offsetting:**

- 4.1 In order to offset the serious harm to fish resulting from the authorized works, undertakings and activities authorized by this Authorization, the Proponent shall construct **9,011 m<sup>2</sup>** of intertidal and subtidal rocky reef habitat in Burrard Inlet, as described in the Proponent’s Offsetting Plan (Section 8.0 of the Application), and in accordance with the specifications included in Schedule B (Figure 2) of this Authorization. The implementation of all fish and fish habitat offsetting measures shall be completed by **March 1, 2019**.
- 4.2 In the event where the Proponent fails to implement the offsetting plan required to be implemented as a condition of this Authorization, DFO may draw upon funds set aside by the Proponent through the irrevocable standby letter of credit (No. S203883, issued by The Toronto-Dominion Bank) provided as part of the application for this Authorization, to cover the costs of implementing measures to offset serious harm to fish resulting from the serious harm authorized here-in.
- 4.3 To assess the effectiveness of offsetting measures, the Proponent shall identify to DFO’s satisfaction, reference sites in Burrard Inlet with similar substrate, grade, depth, and algal species, as the proposed rock reef complexes. Reference sites will be used to establish productivity targets (accounting for seasonal and inter-annual variation) and will include metrics such as species composition, species richness, relative abundance and percent cover as appropriate to evaluate whether offsetting measures are functioning as intended. Indicator species will be identified representative of benthic invertebrate, algal and finfish communities to allow for comparisons with reference sites. The criteria for assessing the effectiveness of offsetting will be developed no later than March 1, 2018, and the appropriateness of the selected reference sites and criteria for assessing effectiveness of offsetting must be agreed to in consultation with DFO.
- 4.4 The offsetting measures will be considered successful if, by year six of the monitoring program algal species composition and relative abundance (percent cover) and fish species composition are comparable to selected reference sites, and invertebrate and finfish species relative abundance (percent cover or density) and richness (number of unique taxa in the survey area) increase over time.
- 4.5 If during any reporting period identified in Condition 5.2.2, monitoring of the effectiveness of offsetting measures indicates that the offsetting measures are deficient, the Proponent shall undertake remedial measures at the earliest time feasible to correct any deficiencies in the offsetting measures, and ensure impacts to fish and fish habitat are mitigated or avoided.

4.6 If the results of monitoring activities required in Condition 5 indicate that the offsetting measures are not functioning according to Condition 4.4, the Proponent shall give written notice to DFO, and implement the contingency measures identified within the Offsetting Plan. In consultation with DFO, contingency measures shall meet the following requirements:

- 4.6.1 The Proponent will determine the reason for failure(s) and develop and implement a contingency plan to address the failure(s) within one calendar year to bring offsetting measures to a level consistent with the standard stated in Conditions 4.3 and 4.4, or as deemed appropriate by DFO.
- 4.6.2 The contingency plan(s) (including any associated monitoring measures) to address deficiencies in offsetting measures shall be submitted to DFO, and the IAMC as defined in Condition 6.1, for review, and approval by DFO at least 120 days prior to implementation of the contingency plan(s).
- 4.6.3 Following implementation of the contingency plan(s), the Proponent will monitor the contingency offsetting measures constructed and/or implemented in accordance with standards stated in Condition 5 below.

4.7 The Proponent shall not carry on any works, undertakings or activities that will adversely disturb or impact the offsetting measures.

**5. Conditions that relate to monitoring and reporting of offsetting measures (described above in Condition 4):**

- 5.1 The Proponent shall conduct monitoring of the offsetting measures in accordance with the monitoring and reporting measures and/or programs described in Section 8.3.4 of the Application unless alternate requirements are specified within the conditions of this Authorization. In the latter case, the requirements specified within the conditions of this Authorization shall be implemented (e.g., a 10-year effectiveness monitoring program schedule must be implemented per Condition 5.2.2 below).
- 5.2 The Proponent shall report to DFO that the offsetting works were conducted according to the conditions of this Authorization by providing:
  - 5.2.1 A post-construction monitoring report to DFO within 90 days of completion of offsetting measures indicating whether the works were conducted according to the conditions of the Authorization. The post-construction monitoring report must include:
    - 5.2.1.1 As-built drawings of the completed offsetting measures and stability assessment of the offsets as described in the Offsetting Plan;
    - 5.2.1.2 A summary of the ‘as-built’ condition of the offsetting measures;
    - 5.2.1.3 Dated photographs of the completed offsetting measures; and
    - 5.2.1.4 A summary of the effectiveness of mitigation measures and standards implemented in accordance with the Construction Compliance Monitoring Program described in Section 8.3.4.1 of the Application.
  - 5.2.2 Monitoring activities conducted as part of the Habitat Effectiveness Monitoring Program (described in Section 8.3.4.2 of the Application) must occur seasonally during the summer and winter months to document seasonal changes in the effectiveness and functioning of the offsetting, and an effectiveness monitoring report

will be submitted 1, 2, 4, 6, 8, and 10 years following the completion of construction of the offsetting measures. Each report must include:

- 5.2.2.1 Geo-referenced photographs of the offsetting measures;
- 5.2.2.2 An assessment of the success of the rock reef complexes consistent with the standards and/or criteria stated in Conditions 4.3 and 4.4 of this Authorization;
- 5.2.2.3 Observations during surveys of the presence of marine birds and marine mammals within the vicinity of the offsetting;
- 5.2.2.4 Measurements of environmental variables during surveys, including ambient temperature and water quality metrics (i.e., temperature, salinity and turbidity) in surface waters and at the depth of the offsetting measures; and
- 5.2.2.5 Any concerns regarding the functioning of the offsetting measures and a description of any remedial measures implemented and their effectiveness.

5.3 All effectiveness monitoring reports are to be submitted no later than December 31<sup>st</sup> of each year referenced in Condition 5.2.2 to [ReferralsPacific@dfo-mpo.gc.ca](mailto:ReferralsPacific@dfo-mpo.gc.ca), referencing DFO file: **17-HPAC-00071**.

## **6. Conditions that relate to reporting and engagement with the IAMC:**

- 6.1 In recognition of the high importance of the health of the Fraser River, Burrard Inlet, and the Salish Sea, and their salmon fisheries, to Indigenous communities for subsistence and cultural reasons, monitoring reports submitted to DFO under Conditions 2.2.12, 3, 4.6.2 and/or 5 of this Authorization shall be shared concurrently by the Proponent with the IAMC and DFO.
- 6.2 If the IAMC communicates concerns to DFO or to the Proponent related to the content of the monitoring reports (e.g., monitoring criteria, measures of success, etc.), the Proponent shall, at the request of DFO and, in a timely manner, meet with DFO and the IAMC to discuss the concerns.
- 6.3 If monitoring activities and/or reports indicate non-compliance with any conditions of this Authorization and/or the provisions of the *Fisheries Act*, the Proponent must identify the reasons for non-compliance, remedial actions or measures taken or to be taken, a timeline for their implementation and the effectiveness of any implemented remedial measures. This information shall be provided in a report to DFO and the IAMC concurrently, and in a timely manner.

### Authorization Limitations and Application Conditions

The Proponent is solely responsible for plans and specifications relating to this Authorization and for all design, safety and workmanship aspects of all the works associated with this Authorization.

The holder of this Authorization is hereby authorized under the authority of paragraph 35(2)(b) of the *Fisheries Act*, R.S.C., 1985, c. F-14 to carry on the works, undertakings and/or activities that are likely to result in serious harm to fish as described herein. This Authorization does not purport to release the Proponent from any obligation to obtain permission from or to comply with the requirements of any other regulatory agencies.

This Authorization does not permit the deposit of a deleterious substance in water frequented by fish. Subsection 36(3) of the *Fisheries Act* prohibits the deposit of any deleterious substances into waters frequented by fish unless authorized by regulations made by Governor in Council.

This Authorization does not permit the killing, harming, capturing or taking of individuals of any species listed under the *Species at Risk Act*, S.C. 2002, c. 29 (SARA) (section 32 of the SARA), or the damage or destruction of the residences of individuals of such species (section 33 of the SARA) or the destruction of critical habitat of any such species (section 58 of the SARA).

The failure to comply with any condition of this Authorization constitutes an offence under paragraph 40(3)(a) of the *Fisheries Act* and may result in charges being laid under the *Fisheries Act*.

This Authorization must be held on site and work crews must be made familiar with the conditions attached.

This Authorization cannot be transferred or assigned to another party. If the works, undertakings or activities authorized to be conducted pursuant to this Authorization are expected to be sold or transferred, or other circumstances arise that are expected to result in a new Proponent taking over the works, undertakings or activities, the Proponent named in this Authorization shall advise DFO in advance.

**SEP 08 2017**

Date of Issuance: \_\_\_\_\_

Approved by:



Rebecca Reid  
Regional Director General  
Pacific Region  
Fisheries and Oceans Canada

## Schedule A - Reference Documents

*Application Form for Paragraph 35(2)(b) Fisheries Act Authorization (Normal Circumstances)*, signed by Mr. David Safari of Trans Mountain Pipeline ULC, and dated February 6, 2017.

*"Trans Mountain Expansion Project - Westridge Marine Terminal Application for Authorization under Paragraph 35(2)(b) of the Fisheries Act"*, prepared for Trans Mountain Kinder Morgan Canada Inc. by Stantec Consulting Ltd., and dated February 1, 2017. KMC Document # 01-13283-TW-WT02-STE-RPT-0003 R0.

*"Addendum to Westridge Marine Terminal Application for Authorization under Paragraph 35(2)(b) of the Fisheries Act"*, prepared for Trans Mountain Kinder Morgan Canada Inc. by Stantec Consulting Ltd., and dated June 16, 2017. KMC Document # 01-13283-TW-WT02-STE-RPT-0003 R0.

Memo from Trans Mountain Pipeline ULC to Fisheries and Oceans Canada, with the subject: "Information Requests Regarding the Westridge Marine Terminal Application for Authorization under Paragraph 35(2)(b) of the *Fisheries Act*.", addressed to Alston Bonamis of Fisheries and Oceans Canada, and dated March 31, 2017. KMC Document # 01-13283-TW-WT00-EV-MEM-0001 R0.

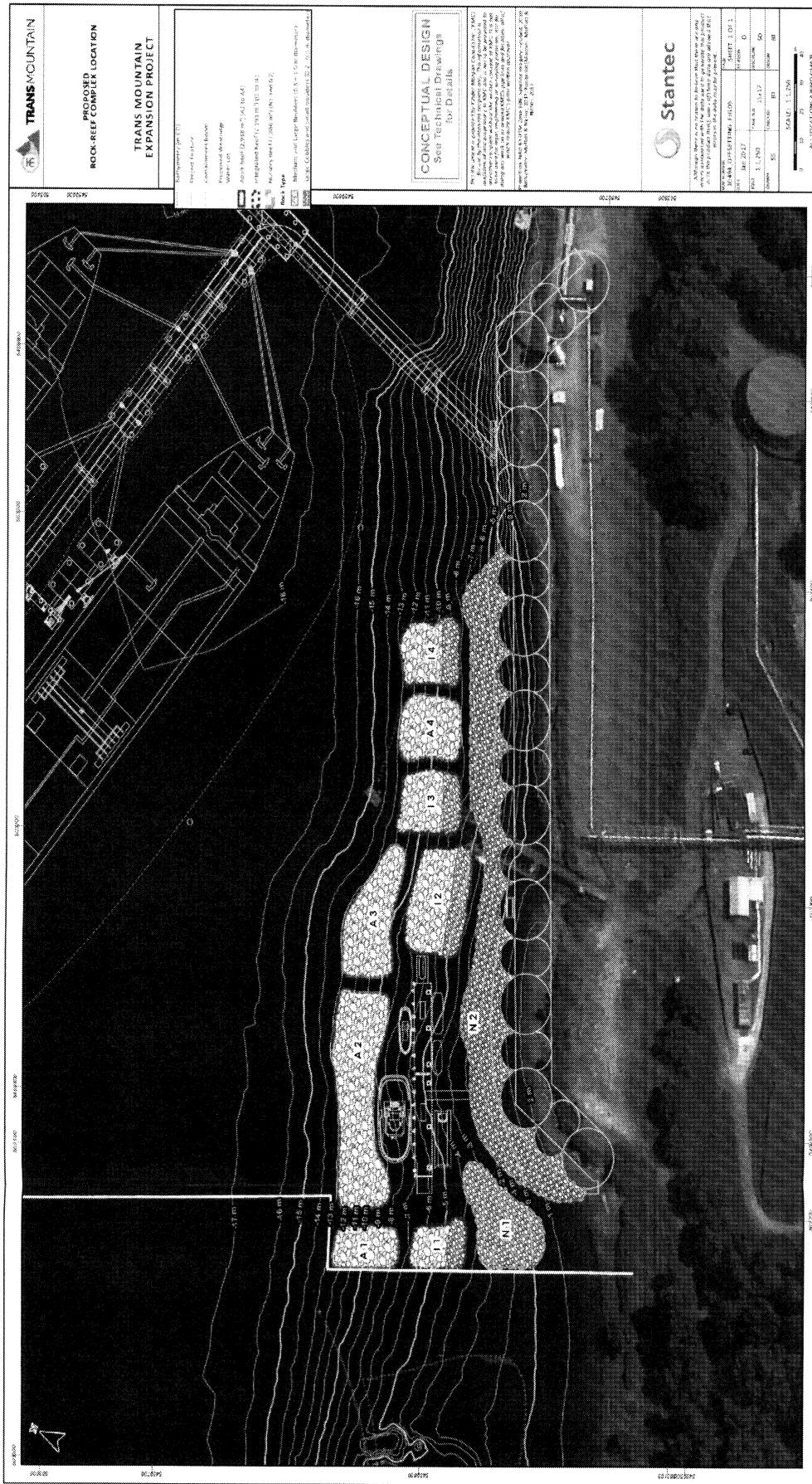
Memo from Trans Mountain Pipeline ULC to Fisheries and Oceans Canada, with the subject: "Response to requests for information regarding the Addendum to the Westridge Marine Terminal Application for Authorization under Paragraph 35(2)(b) of the *Fisheries Act*", addressed to Alston Bonamis of Fisheries and Oceans Canada, and dated August 3, 2017. KMC Document # 01-13283-TW-WT00-EV-MEM-0001.

## Schedule B – Figures

**Figure 1: Summary of the potential serious harm to fish from the footprints of the proposed works, undertakings or activities authorized.**



Figure 2: Design of the proposed rock-reef complex offsetting measure (please reference "Appendix C – Rock-reef Complex Conceptual Designs", in the Application for more detailed drawings)



**Annex 1**

**LOCALIZED EFFECTS ASSESSMENT DOCUMENTATION RECORD (LEADR)**

This completed form must be uploaded to the Referral Action Log of PATH.

**Section 1. Project Description:**

<b>Project Name :</b>	Trans Mountain Expansion Project Westridge Marine Terminal
<b>Name of the waterbody :</b>	Burrard Inlet
<b>PATH #</b>	17-HPAC-00071
<b>Name of the nearest location :</b>	Burnaby, British Columbia 49°07'22.15" N and 122°57'16.09" W
<b>Water body Types(s) :</b>	<input type="checkbox"/> Freshwater <input checked="" type="checkbox"/> Marine <input type="checkbox"/> Estuarine
<b>Proponent :</b>	Trans Mountain Pipeline ULC. 2700, 300 – 5 Avenue SW Calgary, AB T2P 5J2 403-514-6427
<b>Reg. Review Unit :</b>	Oil and Gas
<b>Form prepared by :</b>	Alston Bonamis

**1 a) Briefly describe the project**

Trans Mountain Pipeline ULC (Trans Mountain) is proposing to expand its existing 1,150 km pipeline system between Edmonton, Alberta and Burnaby, British Columbia which includes modification and expansion of the existing Westridge Marine Terminal (the Terminal) in the central harbour of Burrard Inlet in Burnaby, BC.

Works, undertakings or activities involved in the construction of the Terminal expansion include:

- Installation of a bulkhead wall, including excavation of existing shoreline riprap, circular sheet pile cell installation, and infilling the shoreline area (foreshore) to accommodate new onshore infrastructure;
- Installation of piles for construction of three new loading berths and a utility dock off the expanded foreshore area;
- Placement of concrete anchor block to secure containment booms; and
- Decommissioning and removal of an existing small utility dock.

See Appendix A, Figure 1 for a diagram of Project components.

On June 20<sup>th</sup>, 2017, Trans Mountain submitted an Addendum to their Application for a *Fisheries Act* Authorization for works, undertakings or activities associated with construction of the Westridge Marine Terminal Expansion (the Addendum). The additional works included in the Addendum and assessed here-in are as follows:

- Installation of temporary template piles and working piles
- Installation of temporary marine anchors to secure a marine construction safety boom, and concrete anchor blocks to secure a turbidity curtain to contain suspended sediments.
- Additional excavation and replacement of rip rap along the exterior of the bulkhead wall at the eastern and western ends of the terminal foreshore expansion.

- Installation of two surface water runoff outfall pipes and rip rap protection
- Installation and operation of two marine water intakes to provide water for the Terminal's fire suppression system

See Appendix A, Figure 3 for a diagram of the additional works included in the Addendum.

**1 b) Identify and briefly describe all component of works, undertakings or activities (WUA) that have the potential to affect fish and/or fish habitats or aquatic species at risk.**

Code	Name	Brief description
WUA #1	Bulkhead Wall Installation	<p>The general sequence of installation of the bulkhead wall involves excavation of riprap along the existing foreshore, installation of circular sheet pile cells to form the bulkhead wall, and infilling within the sheet pile cells and behind the sheet pile wall to create the foreshore expansion. The total footprint of these works is 6007 m<sup>2</sup> (4,413 m<sup>2</sup> intertidal; 1,594 m<sup>2</sup> subtidal); see Appendix A, Figure 2 for a description of the construction footprint effects on fish habitat. Each construction sequencing stage is described below.</p> <p><i>Riprap Excavation</i> Intertidal and subtidal rocky substrate (predominantly riprap) over the entire footprint will be excavated from the foreshore extension and infilling area. Approximately 24,000 m<sup>3</sup> of rock will be excavated. The seaward half will be excavated from a marine crane using an orange peel grab. The landward section will be excavated from shore using an excavator. Riparian vegetation on the landward side of the riprap will be removed (2 to 4 m along the shoreline; 3,050 m<sup>2</sup> total footprint).</p> <p><i>Sheet Pile Wall Installation</i> An approximately 363 m long bulkhead wall comprised of 11 circular sheet pile cells and 10 connector sheet-pile cells, will be installed to contain the infilling using a barge-based crane and vibratory hammer.</p> <p><i>Infilling</i> Within each sheet pile cell, material will be excavated and then cells will be backfilled with new material from a barge and conveyor. Infilling will also be completed between the existing shoreline and bulkhead wall. Footprint = 5,462 m<sup>2</sup> (4,196 m<sup>2</sup> intertidal; 1,266 m<sup>2</sup> subtidal).</p>
WUA #2	Pile Installation	<p>Footprint (trestle and berth piles) = 455 m<sup>2</sup> subtidal</p> <p>Fifty-one 1,372 mm outer diameter steel pipe piles are included in the construction of the access trestle (18 piles), three junction platforms (23 piles), utility dock (6 piles), and</p>

		<p>firewater pump house (4 piles). Vibratory methods can be used to set piles to 10-21 m above tip then a diesel impact hammer will be used to set the piles to design depth.</p> <p>Installation of 48 mooring dolphin piles (1,829 mm diameter) and 48 berthing dolphin piles (2,286 mm diameter) will require a hydraulic impact hammer although piles may advance up to 25 m under their own weight prior to impact hammering.</p> <p>Thirty-eight 1,372 mm piles are required to support the loading platforms and will also be driven with a hydraulic impact hammer. See Appendix A, Figure 2 for the location and footprint effects of pile installation on fish habitat.</p>
WUA #3	Anchor Block Placement	Nine 1.22 x 0.61 m concrete anchor blocks will be permanently placed on the sea floor around the berthing areas to secure the containment booms. Total footprint = 7 m <sup>2</sup> subtidal
SA #1 (self-assessed)	Utility Dock Removal	A small utility dock (approximately 70 x 13 m = 910 m <sup>2</sup> ) will be removed. Its superstructure will be dismantled and placed on a barge for removal. The existing support piles will be secured with a steel choker and extracted using a derrick crane or a vibratory hammer.  <i>The Proponent has not provided adequate information to conduct a review of this WUA. It is assumed that this WUA has been self-assessed by the Proponent as impacts are not likely from removal of the dock with the mitigation measures described in the Proponent's application. This WUA is therefore not carried forward in the effects assessment.</i>
WUA #4	Installation of template piles and working piles	<p><i>Template Piles</i></p> <p>Installation of the permanent piles associated with the bulkhead wall (i.e., sheet piles; WUA#1) and dock complex (permanent pipe piles; WUA#2) will require the use of pile templates, which are steel structures that guide the placement of permanent piles. Six pile templates will be used during construction, each supported by four temporary template piles (0.66 m<sup>2</sup> footprint area for each template pile). Template piles will be installed at 235 locations throughout the work area (see Appendix A, Figure 4 and 5). The maximum number of template piles installed at any given time will be 24 (based on the use of six pile templates), and each template pile will be in place for no longer than 30 days. It is anticipated that a vibratory method will primarily be used for installation of temporary template piles.</p> <p><i>Working Piles</i></p> <p>Thirty-two temporary working piles (total footprint = 11 m<sup>2</sup>) will be installed during Terminal construction. Twenty of these piles will be installed along the foreshore construction area (6</p>

		<p><math>\text{m}^2</math>), and 12 will be installed to support a marine construction office to the west of the foreshore extension. Seven of the 12 piles will be located in the upper intertidal zone (footprint = 3 <math>\text{m}^2</math>) and the remaining 5 will be located in the marine riparian zone (footprint = 2 <math>\text{m}^2</math>). It is anticipated that a vibratory method will primarily be used for installation of temporary working piles.</p>
WUA #5	Installation of marine anchors and concrete anchor blocks	<p><i>Marine anchors (Danforth, Lightweight, and Flipper Delta anchor types)</i></p> <p>Twenty four marine anchors will be used to secure a marine construction safety boom around the work area to prevent unauthorized access. These anchors will have a total footprint of approximately 58 <math>\text{m}^2</math>, and will be in place from August 2017 to December 2020 (approximately 40 months). Setting these anchors is anticipated to result in anchor drag affecting up to 148.7 <math>\text{m}^2</math> of subtidal fish habitat.</p> <p><i>Concrete anchor blocks</i></p> <p>Twenty three concrete anchor blocks will be used to secure a turbidity curtain around the work area to contain suspended sediment during construction activities (e.g., during excavation of riprap and installation of sheet pile cells). These anchors will have a total footprint of approximately 46 <math>\text{m}^2</math>, and will be in place from August 2017 to March 2019 (approximately 19 months).</p>
WUA #6	Additional excavation and replacement of rip rap along the exterior of the bulkhead wall	Installation of the sheet pile cells that form the bulkhead wall will require the excavation of additional existing rip rap within an area extending 5 m seaward of the bulkhead wall within two areas: (1) off the western end and (2) around the eastern end of the bulkhead wall (see Appendix A, Figure 3). The total footprint of rip rap excavation is estimated at 706 $\text{m}^2$ (western end = 221 $\text{m}^2$ ; eastern end = 485 $\text{m}^2$ ). The existing rip rap will be excavated using an orange peel grab operated from a barge. Once the sheet pile cells have been installed, the excavated rip rap will be replaced over the same areas at the foot of the bulkhead wall. The excavation and replacement of rip rap in these areas will be completed within one DFO least risk work window (August 2017 to February 2018).
WUA #7	Installation of two surface water runoff outfall pipes	<p>Two outfall pipes will be installed for surface runoff to the immediate east and west of the bulkhead wall. Installation of the outfalls is anticipated to take approximately 3 months.</p> <p><i>Eastern Outfall</i></p> <p>Installation of the eastern outfall will require the excavation of existing rip rap in the high intertidal zone over an area of approximately 43 <math>\text{m}^2</math>. Following installation of the outfall, the excavated rip rap will be replaced over the pipe to protect it from displacement.</p>

		<p><i>Western Outfall</i></p> <p>Installation of the western outfall will not require excavation of rip rap. To support the outfall, a bedding layer of new rip rap will be placed within an area of approximately 113 m<sup>2</sup>. Once the bedding layer is in place, the outfall pipe will be installed, and rip rap cover will be placed over the pipe to protect it from displacement.</p>
WUA #8	Installation and operation of two marine water intakes	<p>Two marine water intakes will be installed below the pile-supported foam water supply pump house platform (see Appendix A, Figure 3). Water will be drawn through the intakes by two pumps (one of which will be a full-size spare) with design capacities of 3,000 US gallons per minute [gpm] (681 m<sup>3</sup> per hour). The two pump turbines will descend through the centre of the platform, and the intakes will terminate below 0m CD. The two intakes will be enclosed within a large rectangular fish screen designed in accordance with the DFO marine and freshwater intake guidelines. Based on the current design, the fish screen will measure 5 m long, 3 m wide, and 3.3 m high (footprint = 15 m<sup>2</sup>). Prior to installation of the two marine water intakes and fish screen, any existing rip rap on the seafloor beneath the fish screen will be excavated using an orange peel grab. Following the removal of any existing rip rap, new, clean rip rap will be placed within and around the footprint of the fish screen. The total area affected by rip rap removal (if required) and placement is expected to be approximately 30 m<sup>2</sup>.</p> <p>During Terminal operations, the pumps will be tested once per week for approximately 30 minutes. Seawater pumped during testing will be returned to the ocean. Extended operation of the pumps will only be required in the event of a fire emergency at the Terminal.</p>

## Section 2. Fish Species Present and Habitat Description

### 2 a) Species

Code or name of the WUA	Species likely to be affected by the proposed WUA
WUA #1 Bulkhead Wall Installation	Fish species: Pacific salmon (sockeye, chum, coho, pink, and Chinook), Pacific herring, gunnels, sculpins, surf smelt, anchovy, and eulachon. Pricklebacks and flatfish (likely includes English sole, rock sole, and starry flounder). Surfperch including shiner perch, pile perch, kelp perch, and striped perch. Rockfish (likely including copper and quillback), kelp greenling, and lingcod.
WUA#4 Installation of template piles and working piles	Invertebrate species: Intertidal - 17 species observed including periwinkles, limpets, common acorn barnacles, and blue mussels. Subtidal - 23 species observed including eight arthropods, seven echinoderms, four cnidarians, three molluscs, and one tunicate. Dominant species include orange sea pens, giant plumose anemones, ochre stars, and Dungeness crabs. Red rock crab,
WUA #6 Additional excavation and replacement of rip rap along the exterior of the	

<b>bulkhead wall</b> <b>WUA #7 Installation of two surface water runoff outfall pipes</b>	<p>shrimp (coonstripe shrimp), and prawns.</p> <p>Marine Mammal species: harbour seals (most abundant), occasional sightings of Steller sea lions, harbour porpoise, and Southern resident and Transient (Bigg's) killer whales, and rare sightings of California sea lions, false killer whales, grey whales, humpback whales, minke whales, Northern elephant seals, Northern fur seals, and Pacific white-sided dolphins.</p>
<b>WUA #2 Pile Installation</b> <b>WUA #3 Anchor Block Placement</b> <b>WUA #5 Installation of marine anchors and concrete anchor blocks</b> <b>WUA #8 Installation and operation of two marine water intakes</b>	<p>Fish species: Pricklebacks and flatfish (likely includes English sole, rock sole, and starry flounder). Pacific salmon (sockeye, chum, coho, pink, and Chinook), Pacific herring, anchovy, and eulachon.</p> <p>Invertebrate species (subtidal): 23 species observed including eight arthropods, seven echinoderms, four cnidarians, three molluscs, and one tunicate. Dominant species include orange sea pens, giant plumose anemones, and ochre stars. Dominant species include orange sea pens, giant plumose anemones, ochre stars, and Dungeness crabs. Red rock crab, shrimp (coonstripe shrimp), and prawns.</p> <p>Marine Mammal species: harbour seals (most abundant), occasional sightings of Steller sea lions, harbour porpoise, and Southern resident and Transient (Bigg's) killer whales and rare sightings of California sea lions, false killer whales, grey whales, humpback whales, minke whales, Northern elephant seals, Northern fur seals, and Pacific white-sided dolphins.</p>

## 2 b) Habitat description

Code or name of the WUA	Habitat likely to be affected by the proposed WUA
<b>WUA #1 Bulkhead Wall Installation</b> <b>WUA#4 Installation of template piles and working piles</b>	<u>Intertidal habitat:</u> This habitat has a moderate to high slope (14- 60%) with predominately coarse substrate including boulder, cobble, and riprap containing algae and grasses. Small areas of sand and gravel. Eight algal taxa have been observed; the predominant species are rockweed and sea lettuce.
<b>WUA #6 Additional excavation and replacement of rip rap along the exterior of the bulkhead wall</b> <b>WUA #7 Installation of two surface water runoff outfall pipes</b>	Almost half of the 2.34 km shoreline (1.04 km or 44.5%) is "man-made". Sand flat and mud flat cover 30.1% and 25.4% of the total shoreline, respectively.  The riparian vegetation in the project area being removed is mostly disturbed and therefore, may provide limited ecological function. The vegetation is made up of 38 vascular plant species, typical of an early successional community (e.g., red alder and herbaceous shrubs). Predominant vegetation includes blackberry, asters, ferns, peas, grasses, and horsetails. Overhanging branches and tall trees are lacking.
	In the high intertidal, just west of the existing tanker berth, the predominant species are rockweed, Turkish washcloth, and green ribbon.  Intertidal rocky habitat with algae and grass provide refuge from predators, foraging, and spawning areas. A Rockfish Conservation Area overlaps with the project area.

	<p>A variety of finfish and invertebrates use the intertidal zone during at least one of their life stages. The intertidal habitat provides refuge, rearing, migration, foraging, and spawning areas including for Pacific salmon, Pacific herring, and Dungeness crab. Twelve salmon bearing streams and rivers supporting all five species of Pacific salmon drain into Burrard Inlet in and around the project area.</p> <p><b>Subtidal habitat:</b> Subtidal habitat is dominated by soft substrates (e.g., silt, sand, and mud) with traces of broken shells and organic debris. Shallow areas to the east and west of the existing terminal are generally sandy, with some areas of gravel and small cobble. One section of riprap along the shoreline near the existing loading berth represents the only rocky subtidal feature with subtidal algae (predominantly brown-bladed algae and sea lettuce).</p> <p>Subtidal habitat provides foraging, refuge, rearing, and migration opportunities for Pacific salmon, Pacific herring, and Dungeness crab.</p>
<b>WUA #2 Pile Installation</b> <b>WUA #3 Anchor Block Placement</b> <b>WUA #5 Installation of marine anchors and concrete anchor blocks</b> <b>WUA #8 Installation and operation of two marine water intakes</b>	<p>The subtidal area is dominated by soft substrates (e.g., silt, sand, and mud) with traces of broken shells and organic debris. Shallow areas to the east and west of the existing terminal are generally sandy with some areas of gravel and small cobble. One section of riprap along the shoreline near the existing loading berth represents the only rocky subtidal feature with subtidal algae (predominantly brown bladed algae and sea lettuce).</p> <p>This habitat provides rearing, foraging, and spawning opportunities for several species including flatfish, sea pens, and Dungeness crab.</p>

## 2 c) Species at Risk Act

Are Schedule 1 listed aquatic species at risk present in the vicinity of the project?

Yes  No

If yes, list the aquatic species at risk, their status and indicate if critical habitat and/or residence are present in the vicinity of the project.

Code or name of the WUA	SARA Species	Species and habitat status
All WUA	May occur in Burrard Inlet: Southern Resident killer whale, Transient (Bigg's) killer whale, Steller sea lion, Harbour porpoise, Humpback whale, Grey whale	<input checked="" type="checkbox"/> Endangered or Threatened <input checked="" type="checkbox"/> Special Concern  <input checked="" type="checkbox"/> No Critical Habitat or Residences present in the vicinity of the project <input type="checkbox"/> Critical Habitat present in the vicinity of the project <input type="checkbox"/> Residences present in the vicinity of the project

### **Section 3. Measures to avoid & mitigate impacts to fish & fish habitat**

#### **3 a) Measures to avoid and mitigate**

List key avoidance and mitigation measures the proponent proposes to implement in order to avoid and mitigate impacts to fish and/or fish habitat for specific WUAs.

A comprehensive set of Avoidance and Mitigation Measures has been outlined by the Proponent in its *Fisheries Act authorization Application Supporting Document* (Section 6.0, Table 9).

##### **General Mitigation Measures:**

- Design considerations to limit the in-water footprint and eliminate the need for dredging.
- An Erosion and Sediment Control Plan will be developed and implemented with appropriate shore-based measures (some examples are given in Section 6.2.2 in the Application Supporting document).
- Isolation of in-water works and fish salvage will be conducted to the extent possible.
- A qualified Environmental Monitor (EM) will be onsite during in-water construction activities.
- Contingency measures will be identified if mitigation measures are not effective (e.g., adjust or maintain curtains, implement additional measures, increase frequency of monitoring)

##### **WUA #1 Bulkhead Wall Installation and WUA #6 Additional excavation and replacement of rip rap along the exterior of the bulkhead wall:**

- Work will be conducted during the least risk timing window for Burrard Inlet (August 16 to February 28). Excavation within sheet pile wall cells and infilling completed outside the least risk window will occur in isolation of the aquatic environment to the extent possible.
- A turbidity curtain secured with anchors, buoys, and a weighted chain, will be installed around the work area to contain suspended sediment and limit its dispersal and reduce fish movement into the work area. Water quality monitoring will be conducted following riprap excavation and infilling behind the bulkhead wall.
- Fish salvage targeting CRA fisheries species (e.g., Dungeness crab and surf perch) will be conducted using crab and fish trapping/netting and seines (where possible) within sheet pile cells after installation of each sheet pile cell and prior to excavation of substrate and infilling. Fish caught will be released in suitable habitat at least 500 m away from construction activities. Information on fish caught and release locations will be recorded by the EM.

##### **WUA #2 Pile Installation and WUA#4 Installation of template piles and working piles:**

- Pile installation will be primarily conducted within least risk windows, but Trans Mountain would conduct work outside the windows with appropriate mitigation in place.
- BC Marine and Pile Driving BMPs will be applied throughout the activity and not dependent on the observation of death of fish.
- Pile driving using a vibratory hammer will be used where practical and feasible, to minimize potential noise effects; underwater noise generated by vibratory pile driving is not as loud as noise generated by impact pile driving.
- Bubble curtains will be deployed around the full wetted circumference of the pile during impact hammering to limit the propagation of underwater noise. A hydrophone will be used to verify that underwater noise does not exceed 30 kPa for fish injury or mortality.
- Impact hammering will be limited to daytime hours to enable effective visual monitoring.
- Prior to commencement of impact pile driving, visual monitoring will be conducted for cetaceans and marine mammals at risk within an exclusion zone of 1 km. This zone will encompass the area where sound levels will exceed 160 dB re: 1μPa, and will be verified and adjusted using hydrophone monitoring as appropriate. Simultaneous visual monitoring will be conducted within a harbor seal-specific exclusion zone of 150 m. Work will only commence if marine mammals are not observed in their respective exclusion zones for 30 minutes. Exclusion zones will be monitored continuously

during impact pile driving. If a marine mammal is observed within their respective exclusion zones, pile driving activities will cease until the individual leaves the exclusion zone or is not observed for a period of 30 minutes.

- Underwater noise will be measured using a hydrophone outside the bubble curtain at the start of impact pile driving and for the first several days. If outside the least-risk window, underwater noise will be verified when there are changes in pile driving activities (e.g., hammer size, pile size).
- If sound levels exceed the threshold with a bubble curtain present, or a fish kill is observed, pile driving activities will be ceased and additional mitigation implemented (e.g., use of a fabric curtain to confine bubble streams)

**WUA #7 Installation of two surface water runoff outfall pipes**

- Work will be conducted during the least risk timing window for Burrard Inlet (August 16 to February 28).
- An Erosion and Sediment Control Plan will be developed and implemented with appropriate shore-based measures.
- Isolation of in-water works and fish salvage will be conducted to the extent possible.

**WUA #8 Installation and operation of two marine water intakes**

- Work will be conducted during the least risk timing window for Burrard Inlet (August 16 to February 28).
- An Erosion and Sediment Control Plan will be developed and implemented with appropriate shore-based measures.
- Isolation of in-water works and fish salvage will be conducted to the extent possible.
- The intakes will be enclosed within a large rectangular fish screen designed in accordance with the DFO marine and freshwater intake guidelines (DFO 1991, 1995) and best management practices to minimize entrainment or impingement of fish during pump operation.

**WUA #3 Anchor Block Placement and WUA #5 Installation of marine anchors and concrete anchor blocks** -  
No mitigation is proposed for these WUAs.

Will all reasonable measures (current best practices) to avoid and mitigate the impacts to fish and fish habitat be applied?

Yes:

No :

If not, provide an explanation by WUA as appropriate:

**3 b) Additional measures**

List any additional avoidance and mitigation measures that should be applied to avoid and mitigate impacts to fish and fish habitat.

1. *The Fisheries Act prohibits serious harm to fish, and section 32 of the Species at Risk Act prohibits the killing of a species at risk. In-water installation of steel pipe piles over 18 inches or 46 cm in diameter by means of a drop hammer, diesel hammer, air hammer, or similar equipment can result in high underwater sound levels (peak pressures) capable of injuring fish and marine mammals. Any pile driving works or activities that result in increases in underwater sound levels (peak pressures) over 30 kPa greater than 5 meters from the pile can result in injury to fish, and sound levels exceeding a root mean square Sound Pressure Level (SPLrms) of 160 dB re 1 µPa can injure marine mammals. Pile driving activities that result in exceedances of these sound levels require specific mitigation measures (e.g., bubble curtains, fish exclusion, etc.) to avoid adverse impacts to fish and marine mammals. It is the Proponent's responsibility to ensure that appropriate mitigation measures are employed where necessary*

*so that the work, undertaking or activity does not contravene the Fisheries Act and/or Species at risk Act.*

2. *Upon commencement of impact pile installation or recommencement of such activities after a delay of 30 minutes or more, pile installation shall ramp-up by starting with less frequent impact strikes of lower force. This ramp-up period is designed to enable any fish and marine mammals that may be in the area time to leave the area prior to the generation of peak pressure and noise levels for pile installation.*
3. *In-water pile driving by means of diesel hammer, air hammer or similar equipment must be monitored with a hydrophone operated by an appropriately qualified individual. As feasible, pressure levels will be recorded at a range of depths throughout the water column and at various distances and directions from the pile being driven. Monitoring shall be carried out throughout the operation, especially during periods of resistance or refusal or in situations of strong currents. Monitoring reports will be provided to DFO.*
4. *If, despite the implementation of mitigation measures, further visual and/or hydrophone monitoring reveals unacceptable conditions (sound pressure level exceedances and/or fish kills), then the work must stop immediately, and the methods will be reviewed and modified in consultation with DFO.*
5. *To minimize any adverse effects on juvenile salmonids Trans Mountain has committed to restricting all nearshore in-water Project construction activities (within a 50-m horizontal distance seaward of the higher high water large tide level) at the Westridge Marine Terminal that have the potential to harm fish to a modified timing window of August 16 – March 15. This timing window, along with the spatial commitment, avoids periods of potential spawning by herring, higher local abundance of finfish and invertebrates, and the timing/location of their sensitive life processes (e.g., out-migrating juvenile salmon). The in-water Project construction activities restricted to this period comprise:*
  - *excavation and placement of riprap*
  - *installation of sheet-pile cells and permanent piles (by vibratory or impact-hammer method)*
  - *installation of temporary template piles and working piles (by vibratory or impact-hammer method)*
  - *installation of anchors for the turbidity curtain and marine vessel safety boom*
  - *installation of outfall pipes*
  - *installation of the rock-reef complex (offsetting)*

Have discussion(s) taken place with the proponent to identify these measures? Document whether the proponent has agreed to implement them.

Discussions have occurred with the Proponent, and the Proponent has committed to employing the more conservative 22.5 kPa sound pressure level threshold for pile driving activities that occur outside of the work window for Burrard Inlet (August 16 - February 28), and the standard 30 kPa threshold during the least risk window. All other mitigation measures described above have been committed to by the proponent.

## Section 4. Residual impacts

In this section, describe the residual impact of each WUA.

### 4 a) Death of fish

In the table below, describe the residual impacts to fish likely to be caused by each WUA in terms of fish mortality (include species at risk).

Code or name of the WUA	Life stage and/or species	Cause of mortality (turbines, explosives etc.)	Estimate the likely amount of mortality caused by the WUA (specify unit or level of risk)
<b>WUA #1 Bulkhead Wall Installation</b>	Benthic invertebrates (e.g., Dungeness crab, ochre stars, post settlement juvenile and adult mussels, sea cucumbers)	Crushing Burial Desiccation	Salvage of invertebrates attached to benthic substrates (e.g., barnacles, mussels, etc.) is not practical so some death to sessile or slow moving organisms may be unavoidable.
<b>WUA #3 Anchor Block Placement</b>			
<b>WUA #5 Installation of marine anchors and concrete anchor blocks</b>	Finfish (e.g., gunnels and sculpin, juvenile and adult surf perch)		The loss of sessile individuals is of low risk to the fisheries resource as density is expected to be relatively low in the project area.
<b>WUA #6 Additional excavation and replacement of rip rap along the exterior of the bulkhead wall</b>			There is a lower likelihood that mobile species (e.g., juvenile and adult Dungeness crab, adult shrimp, and finfish) will be killed, as they are expected to avoid or flee the area due to visual or auditory disturbance from WUA. Low risk of death to free-swimming species if effective mitigation measures are employed (e.g., finfish and crab salvages).
<b>WUA #7 Installation of two surface water runoff outfall pipes</b>			
<b>WUA #8 Installation and operation of two marine water intakes</b>		Entrainment and/or impingement	A low level of fish mortality (largely invertebrate eggs, larvae and small juvenile fish), may occur from entrainment or impingement as a result of operation of the water intakes. Use of a fish screen around the intakes constructed in line with DFO guidelines for marine and freshwater intakes should minimize risks associated with entrainment or impingement.
<b>WUA #2 Pile Installation</b>	Benthic invertebrates (e.g., orange sea pen, Dungeness crab)	Crushing Burial Desiccation	Negligible mortality/impacts (low risk) to fish and marine mammals with the application of mitigation measures for pile driving (e.g., bubble curtains, ramp up procedures, hydrophone
<b>WUA#4 Installation of template piles and working piles</b>	Finfish (e.g., juvenile and adult flatfish)	Barotrauma	

	Pacific salmon, Pacific herring  Marine mammal species	monitoring, exclusion zones, etc.)  Salvage of invertebrates attached to benthic substrates (e.g., barnacles, mussels, etc.) is not practical so some death to sessile or slow moving organisms may be unavoidable.  The loss of sessile individuals is of low risk to the fisheries resource as density is expected to be relatively low in the project area.
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#### 4 b) Permanent alteration

Describe the duration of the residual impacts to fish habitat (including critical habitat and residence of aquatic species at risk) likely to be caused by each WUA. Also, describe the size and or intensity of the impact and the type of habitat affected. If the WUA causes a disruption or alteration that does not constitute a "permanent alteration", please describe the rationale.

Code or name of the WUA	Describe the permanent alteration likely to be caused by each WUA.
<b>WUA #1 Bulkhead Wall Installation</b>	<p><b>Permanent Alteration -</b> Riprap excavation (excluding the area to be infilled) will result in permanent alteration of 545 m<sup>2</sup> rocky habitat to predominantly soft substrate on the outer edges of the sheet pile wall:</p> <ul style="list-style-type: none"><li>• 217 m<sup>2</sup> intertidal habitat</li><li>• 328 m<sup>2</sup> subtidal habitat</li></ul> <p><b>Temporary Alteration -</b> Riparian habitat being removed (3,050 m<sup>2</sup>) is a narrow band (2 to 4 m), heavily modified (i.e., cleared historically and allowed to grow), or anthropogenic (i.e., planted and maintained). It may provide some detrital matter but is unlikely to provide refuge, foraging, or spawning, habitat. The vegetation lacks overhanging branches and tall trees, providing limited shading function. The majority of the riparian vegetation affected will be restored or enhanced as part of the Westridge Marine Terminal Riparian Habitat Mitigation Plan. Riparian habitat to the east and west of the terminal which is unaffected by construction, includes more mature, taller tree species, and a denser shrub layer.</p>
<b>WUA #3 Anchor Block Placement</b>	<p><b>Permanent Alteration -</b> Anchor block placement will result in alteration of 7 m<sup>2</sup> of subtidal soft-sediment habitat to predominantly hard substrate. This represents a small footprint, and unaffected soft substrate is abundant in the area. The anchor blocks may also serve to add habitat complexity in the largely uniform soft substrate habitat. Residual impacts are unlikely from the placement of anchor blocks.</p>

<b>WUA#4</b> <b>Installation of template piles and working piles</b>	<p><i>Template Piles</i> <b>Temporary Alteration</b> - The maximum number of template piles installed at any given time will be 24 (based on the use of six pile templates), and each template pile will be in place for no longer than 30 days. The template piles associated with the additional works will affect approximately 145 m<sup>2</sup> subtidal soft-sediment habitat.</p> <p><i>Working Piles – Foreshore</i> <b>Temporary Alteration</b> - Twenty working piles will be installed along the foreshore construction area and will be in place for approximately 50 days. The total footprint of these piles is anticipated to result in 6 m<sup>2</sup> footprint.</p> <p><i>Working Piles – Marine Construction Office</i> <b>Permanent Alteration</b> – Seven working piles will be located in the upper intertidal zone with a total footprint of 3 m<sup>2</sup>. <b>Temporary Alteration</b> – Five working piles will be located in the marine riparian zone with a total footprint of 2 m<sup>2</sup>.</p>
<b>WUA #5</b> <b>Installation of marine anchors and concrete anchor blocks</b>	<p><i>Marine Anchors (Danforth, Lightweight, and Flipper Delta anchor types)</i> <b>Permanent Alteration</b> - Twenty-four marine anchors will be installed in predominantly subtidal soft-sediment habitat. Total footprint will be approximately 58 m<sup>2</sup>, and the anchors will be in place for about 40 months. <b>Temporary Alteration</b> - When setting the marine anchors for the purpose of securing the marine construction safety boom, some anchor drag is anticipated, and could result in disturbance of subtidal soft sediment habitat of up to 148.7 m<sup>2</sup>.</p> <p><i>Concrete Anchor Blocks</i> <b>Permanent Alteration</b> - Twenty-three concrete anchor blocks will be installed in predominantly subtidal soft-sediment habitat. Total footprint will be approximately 46 m<sup>2</sup>, and the concrete anchors will be in place for about 19 months.</p>
<b>WUA #6</b> <b>Additional excavation and replacement of rip rap along the exterior of the bulkhead wall</b>	<p><b>Temporary Alteration</b> – The additional excavation of riprap will result in temporary alteration of 706 m<sup>2</sup> rocky intertidal and subtidal habitats along the eastern and western ends of the bulkhead wall. The excavation and replacement of rip rap in these areas will be completed within one DFO least risk work windows (August 2017 – February 2018).</p>
<b>WUA #7</b> <b>Installation of two surface water runoff outfall pipes</b>	<p><i>Eastern Outfall</i> <b>Temporary Alteration</b> - Installation of the eastern outfall will require the excavation of existing riprap in the high intertidal zone over an area of approximately 43 m<sup>2</sup>. Following installation of the outfall, the excavated riprap will be replaced over the pipe to protect it from displacement.</p> <p><i>Western Outfall</i> <b>Permanent Alteration</b> - Installation of the western outfall will not require excavation of riprap. To support the outfall, a bedding layer of new riprap will be placed within an area of approximately 113 m<sup>2</sup> in the high intertidal zone (predominantly sand and shell substrates currently). Once the bedding layer is in place, the outfall pipe will be installed, and rip rap cover will be placed over the pipe to protect it from displacement.</p>

<b>WUA #8 Installation and operation of two marine water intakes</b>	<b>Permanent Alteration</b> - Prior to installation of the two marine water intakes and fish screen, any existing riprap on the seafloor beneath the fish screen will be excavated using an orange peel grab. Following the removal of any existing riprap, new, clean riprap will be placed within and around the footprint of the fish screen. The total area affected by riprap removal (if required) and placement is expected to be approximately 30 m <sup>2</sup> .
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#### 4 c) Destruction of habitat

Describe the destruction to fish habitat (including critical habitat and residence of aquatic species at risk) likely to be caused by each WUA in terms of the size of the impact and the type of habitat affected.

Code or name of the WUA	Describe the destruction of habitat likely to be caused by each WUA
<b>WUA #1 Bulkhead Wall Installation</b>	Marine infilling will result in the loss of 5,462 m <sup>2</sup> rocky habitat: <ul style="list-style-type: none"> <li>• 4,196 m<sup>2</sup> intertidal habitat</li> <li>• 1,266 m<sup>2</sup> subtidal habitat</li> </ul> Riparian clearing will result in loss of 3,050 m <sup>2</sup> riparian habitat.
<b>WUA #2 Pile Installation</b>	Pile installation will result in loss of 455 m <sup>2</sup> subtidal soft-sediment habitat.

#### 4 d) Aquatic species at risk

Summarize the residual impacts likely to be caused by each WUA on aquatic species at risk that are listed as endangered or threatened under SARA: harm; harass; capture or kill an individual of an aquatic SARA-listed species; damage or destruction of a residence of an aquatic SARA-listed species; destruction of critical habitat of an aquatic SARA-listed species.

Code or name of the WUA	Describe the residual impacts likely to be caused by each WUA on aquatic species at risk that are listed as endangered or threatened
<b>All WUA</b>	No residual impacts to aquatic species at risk anticipated with implementation of mitigation measures.

#### 4e) Residual Impacts Summary

Indicate the focus of the likely residual impacts.

Code or name of the WUA	<i>Fisheries Act</i>	<i>Species at Risk Act (SARA)</i>
<b>WUA #1 Bulkhead Wall Installation</b>	<input type="checkbox"/> death of fish <input checked="" type="checkbox"/> permanent alteration to fish habitat <input checked="" type="checkbox"/> destruction of fish habitat <input type="checkbox"/> flow and passage <input type="checkbox"/> N/A*	<input type="checkbox"/> harm, harass, or capture an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> death of an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> damage or destruction of a residence of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> destruction of Critical Habitat of an aquatic SARA-listed endangered or threatened species <input checked="" type="checkbox"/> N/A

<b>WUA #2 Pile Installation</b>	<input type="checkbox"/> death of fish <input type="checkbox"/> permanent alteration to fish habitat <input checked="" type="checkbox"/> destruction of fish habitat <input type="checkbox"/> flow and passage <input type="checkbox"/> N/A*	<input type="checkbox"/> harm, harass, or capture an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> death of an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> damage or destruction of a residence of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> destruction of Critical Habitat of an aquatic SARA-listed endangered or threatened species <input checked="" type="checkbox"/> N/A
<b>WUA #3 Anchor Block Placement</b>	<input type="checkbox"/> death of fish <input checked="" type="checkbox"/> permanent alteration to fish habitat <input type="checkbox"/> destruction of fish habitat <input type="checkbox"/> flow and passage <input type="checkbox"/> N/A*	<input type="checkbox"/> harm, harass, or capture an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> death of an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> damage or destruction of a residence of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> destruction of Critical Habitat of an aquatic SARA-listed endangered or threatened species <input checked="" type="checkbox"/> N/A
<b>WUA #4 Installation of template piles and working piles - <u>Only 7 Working Piles for the Marine Construction Office</u></b>	<input type="checkbox"/> death of fish <input checked="" type="checkbox"/> permanent alteration to fish habitat <input type="checkbox"/> destruction of fish habitat <input type="checkbox"/> flow and passage <input type="checkbox"/> N/A*	<input type="checkbox"/> harm, harass, or capture an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> death of an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> damage or destruction of a residence of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> destruction of Critical Habitat of an aquatic SARA-listed endangered or threatened species <input checked="" type="checkbox"/> N/A
<b>WUA #5 Installation of marine anchors and concrete anchor blocks</b>	<input type="checkbox"/> death of fish <input checked="" type="checkbox"/> permanent alteration to fish habitat <input type="checkbox"/> destruction of fish habitat <input type="checkbox"/> flow and passage <input type="checkbox"/> N/A*	<input type="checkbox"/> harm, harass, or capture an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> death of an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> damage or destruction of a residence of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> destruction of Critical Habitat of an aquatic SARA-listed endangered or threatened species <input checked="" type="checkbox"/> N/A
<b>WUA #6 Additional excavation and replacement of rip rap along the exterior of the bulkhead wall</b>	<input type="checkbox"/> death of fish <input type="checkbox"/> permanent alteration to fish habitat <input type="checkbox"/> destruction of fish habitat <input type="checkbox"/> flow and passage <input checked="" type="checkbox"/> N/A*	<input type="checkbox"/> harm, harass, or capture an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> death of an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> damage or destruction of a residence of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> destruction of Critical Habitat of an aquatic SARA-listed endangered or threatened species <input checked="" type="checkbox"/> N/A
<b>WUA #7 Installation of two surface water runoff outfall pipes - <u>Only the Western outfall</u></b>	<input type="checkbox"/> death of fish <input checked="" type="checkbox"/> permanent alteration to fish habitat <input type="checkbox"/> destruction of fish habitat <input type="checkbox"/> flow and passage <input type="checkbox"/> N/A*	<input type="checkbox"/> harm, harass, or capture an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> death of an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> damage or destruction of a residence of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> destruction of Critical Habitat of an aquatic SARA-listed endangered or threatened species <input checked="" type="checkbox"/> N/A
<b>WUA #8 Installation and operation of</b>	<input type="checkbox"/> death of fish <input checked="" type="checkbox"/> permanent alteration to fish habitat <input type="checkbox"/> destruction of fish	<input type="checkbox"/> harm, harass, or capture an individual of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> death of an individual of an aquatic SARA-listed endangered or threatened species

<b>two marine water intakes</b>	<b>habitat</b> <input type="checkbox"/> flow and passage <input checked="" type="checkbox"/> N/A*	<input type="checkbox"/> damage or destruction of a residence of an aquatic SARA-listed endangered or threatened species <input type="checkbox"/> destruction of Critical Habitat of an aquatic SARA-listed endangered or threatened species <input checked="" type="checkbox"/> N/A
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\* If there are no residual impacts or no SARA issues, check « N/A ». If you check « N/A » under both Acts, proceed to section 6.

## Section 5. Localized effects assessment

### 5 a) Fish populations (mortality)

Describe the significance of the estimated mortality as documented in sections 4a & d.

Code or name of the WUA	Life stage and or species	Significance	Rationale
<b>WUA #1 Bulkhead Wall Installation</b>	Finfish (e.g., gunnels and sculpin, juvenile and adult surf perch, Pacific salmon, herring, rockfish, and lingcod)	Low	Low risk of mortality to free swimming species.
<b>WUA #3 Anchor Block Placement</b>	Benthic invertebrates (e.g., Dungeness crab, ochre stars, post settlement juvenile and adult mussels, sea cucumbers)	Low	Minor risk of death to sessile or slow moving individuals.
<b>WUA #5 Installation of marine anchors and concrete anchor blocks</b>			
<b>WUA #6 Additional excavation and replacement of rip rap along the exterior of the bulkhead wall</b>			
<b>WUA #7 Installation of two surface water runoff outfall pipes</b>			
<b>WUA #8 Installation and operation of two marine water intakes</b>			
<b>WUA #2 Pile Installation</b>	Finfish (e.g., juvenile and adult flatfish)	Low	Low risk of mortality to free swimming species and with mitigation measures implemented.
<b>WUA#4 Installation of template piles and working piles</b>	Pacific salmon, Pacific herring	Low	Low risk of mortality to free swimming species and with mitigation measures implemented.
	Marine mammal species	Low	Low risk of mortality with mitigation measures implemented.
	Benthic invertebrates (e.g., orange sea pen, Dungeness crab)	Low	Minor risk of death to sessile or slow moving individuals.

## 5 b) Fish Habitat

**Part 1 - Assess the significance of the changes to the function and the condition of the habitat likely to be affected by each WUA based on the information documented in Sections 4b, c and d.**

Code or name of the WUA	Describe the changes to the function and the condition of the habitat likely to be affected by each WUA
<b>WUA #1 Bulkhead Wall Installation</b>	<p>The intertidal rocky habitat lost (<math>4,196 \text{ m}^2</math>) provides rearing and foraging opportunities for fish including lingcod and Pacific salmon. The subtidal rocky habitat lost (<math>1,266 \text{ m}^2</math>) provides habitat complexity, refuge, foraging, and spawning opportunities for finfish and benthic invertebrates. This habitat is less abundant in the area than soft sediment habitat. Loss of this habitat has the potential to displace fish. This subtidal rocky habitat is important for rockfish; it is within a Rockfish Conservation Area and similar habitat in the area is limited. Thus, these impacts may result in a localized effect.</p> <p>The intertidal rocky habitat (<math>217 \text{ m}^2</math>) and subtidal rocky habitat (<math>328 \text{ m}^2</math>) permanently altered to predominantly soft sediment provides important foraging, refuge, rearing, migration, and spawning opportunities for invertebrate and finfish species (e.g., Pacific salmon, Pacific herring, Dungeness crab, rockfish). Population level effects are not anticipated on fish and invertebrate (Dungeness crab) populations, but the additive footprint effects equate to a loss of habitat that puts this WUA in the red zone of the matrix (Appendix B). Thus, these impacts may result in a localized effect.</p>
<b>WUA #2 Pile Installation</b>	The predominantly average value soft sediment habitat lost ( $455 \text{ m}^2$ ) provides rearing, foraging, and spawning habitat for several CRA species including flatfish, sea pens, and Dungeness crab. Although similar habitat is available in abundance in Burrard Inlet, the proposed pile driving activities will be occurring immediately adjacent to habitat affected by WUA #1, and therefore could result in an additive overall negative effect on fisheries productivity in the area. Population level effects are not anticipated on fish and invertebrate (Dungeness crab) populations, but the additive footprint effects with WUA #1 do equate to a loss of habitat that puts this WUA in the red zone of the matrix (Appendix B). Thus, Pile Installation may result in a localized effect.
<b>WUA #3 Anchor Block Placement</b>	Predominantly low value soft sediment deeper subtidal habitat ( $7 \text{ m}^2$ ) will be affected, that provides rearing and foraging habitat for several CRA species including flatfish, sea pens, and Dungeness crab. Similar habitat is available in abundance in Burrard Inlet, and the footprint of these anchors is unlikely to cause population-level impacts to fish or invertebrates (e.g. Dungeness crab). Although the placement of the anchor blocks will result in a minor loss of soft-sediment habitat, the anchor blocks themselves will likely serve to increase habitat complexity by adding rugosity to the largely uniform soft-bottom seafloor. Thus, a localized effect is not anticipated.

<b>WUA #4 Installation of template piles and working piles</b>	<p><i>Working Piles – Marine Construction Office</i></p> <p>Seven working piles that will be located in the upper intertidal zone will affect average value intertidal habitat with a total footprint of 3 m<sup>2</sup>. Upper intertidal habitat is less common in Burrard Inlet, and the effects when considered in tandem with WUA#1 and WUA#2 cumulatively, may result in a localized effect to CRA fisheries.</p> <p>**NOTE – Template piles and other working piles were not anticipated to result in residual effects, and are therefore not carried forward to the localized effects assessment.</p>
<b>WUA #5 Installation of marine anchors and concrete anchor blocks</b>	Predominantly low value soft sediment deeper subtidal habitat (104 m <sup>2</sup> ) will be affected by the footprint of the anchors (Appendix A, Figure 5); similar habitat will temporarily be affected by anchor drag during the setting of the anchors, but no residual effects are anticipated. The soft-sediment subtidal habitat provides rearing and foraging habitat for several CRA species including flatfish, sea pens, and Dungeness crab. Similar habitat is available in abundance in Burrard Inlet, and the footprint of these anchors is unlikely to cause population-level impacts to fish or invertebrates (e.g., Dungeness crab). Although the placement of the marine anchors and concrete anchor blocks will result in a minor loss of soft-sediment habitat, they will likely serve to temporarily increase habitat complexity by adding rugosity to the largely uniform soft-bottom seafloor. Furthermore, these anchors will be removed within approximately 40 months, minimizing any long term impacts to CRA fisheries. Thus, a localized effect is not anticipated.
<b>WUA #7 Installation of two surface water runoff outfall pipes</b>	<p><i>Western Outfall</i></p> <p>Permanent alteration of approximately 113 m<sup>2</sup> of average value upper intertidal habitat will be affected by installation of the western outfall. Upper intertidal habitat is less common in Burrard Inlet, and these effects when considered in tandem with WUA#1, WUA#2, and WUA#4 (only the 7 piles installed along the upper intertidal for the marine construction office) cumulatively, may result in a localized effect to CRA fisheries.</p> <p>**NOTE - No residual effects are anticipated on fish habitat as a result of installation of the Eastern Outfall, as existing riprap is excavated and then replaced, and therefore this component was not carried forward to the localized effects assessment.</p>
<b>WUA #8 Installation and operation of two marine water intakes</b>	Installation of the two marine water intakes may require some riprap removal along the seafloor, but is more likely to impact soft-sediment habitat. The placement of new the riprap along the seafloor and installation of the fish screen on this riprap bedding will resulting in approximately 30 m <sup>2</sup> of permanent alteration to average value subtidal soft-sediment habitat used by finfish and benthic invertebrates (e.g., Dungeness crab). Soft-sediment habitat is abundant in the Inlet, and the installation of riprap will add to habitat complexity in the subtidal area. Given the small footprint of the impact, unlikely population-level impacts to fish and invertebrate, and the potential for the new riprap to provide beneficial habitat, a localized effect is not anticipated.

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**Part 2** - Based on the function and condition of the fish habitat described above, regional habitat examples and professional judgement, identify the categories that best describe the habitat that is affected by each WUA and the size of the impacts. Note that multiple habitat categories and sizes can be listed for each WUA.

Code or name of the WUA	Affected Area ( $m^2$ ) by habitat category			
	Low or marginal habitat	Average habitat	Important habitat	Exceptional habitat
WUA #1 Bulkhead Wall Installation			6,007 $m^2$ (4,413 $m^2$ intertidal; 1,594 $m^2$ subtidal)	
WUA #2 Pile Installation		455 $m^2$ subtidal		
WUA #4 Installation of template piles and working piles		3 $m^2$ intertidal (7 working piles)		
WUA #7 Installation of two surface water runoff outfall pipes		113 $m^2$ subtidal (western outfall)		
		Total = 571 $m^2$		
WUA #3 Anchor Block Placement	7 $m^2$ subtidal			
WUA #5 Installation of marine anchors and concrete anchor blocks	104 $m^2$ subtidal			
WUA #8 Installation and operation of two marine water intakes		30 $m^2$ subtidal		

**5 c) Aquatic species at risk       N/A**

Summarize the effects on aquatic species at risk based on the information provided in 4d.

*Assessor Sign-off (on sections 1-5 of the form)*

Prepared by:	Alston Bonamis
Date:	August 4, 2017
Comments:	Footprints of WUA #1, WUA #2, WUA#4, and WUA#7 should be considered cumulatively when determining if a localized effect will occur; Even though individual WUA footprints may not exceed LEADR thresholds, these WUA occur within the same area, affect the same or similar habitat, and impact the same species.

## Section 6. Recommended Communication to the Proponent

### 6 a) Summary of localized effects assessment

Fill in the table below using Yes/No.

Consolidate the findings of sections 5(a) & (b) by indicating if a localized effect is likely for each WUA.

For column 5(b) indicate "Yes" if the size/habitat is found in the red zone of Figure 3, or "No" if it is found in the green zone (regardless of final recommendation in 6 b).

For column 5(c), indicate "Yes" if there are effects on aquatic species at risk and a SARA permit (or a Fisheries Act authorization with SARA conditions) must be sought.

Code or name of the WUA	Localized effect		5 c) Aquatic species at risk
	5 a) Fish populations (mortality)	5 b) Fish habitat 	
WUA #1 Bulkhead Wall Installation	No	Yes	No
WUA #2 Pile Installation			
WUA #4 Installation of template piles and working piles			
WUA #7 Installation of two surface water runoff outfall pipes			
WUA #3 Anchor Block Placement	No	No	No
WUA #5 Installation of marine anchors and concrete anchor blocks	No	No	No
WUA #8 Installation and operation of two marine water intakes	No	No	No

*\*\*NOTE: Footprints of WUA #1, WUA #2, WUA#4, and WUA#7 are considered cumulatively when determining to determine if there will be a localized effect to CRA fisheries in the vicinity of the proposed Westridge Marine Terminal Expansion.*

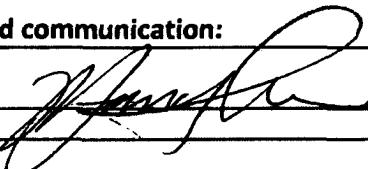
### 6 b) Communication to the proponent

Based on section 6 (a) above and the analysis provided in this form, indicate the type of communication that should be sent to the proponent. Provide a rationale in the box below.

Type of communication	<input type="checkbox"/> Site-specific LoA (Letter C – Avoid & Mitigate) no SAR mitigation <input type="checkbox"/> Site-specific LoA (Letter C – Avoid & Mitigate) with SAR Mitigation <input type="checkbox"/> Letter F3 indicating that a stand-alone SARA Permit should be sought (for section 32 of SARA). This letter may contain mitigation for other fish species. <input checked="" type="checkbox"/> A Fisheries Act authorization should be sought (Letter F1) <input type="checkbox"/> A Fisheries Act EMERGENCY authorization should be sought (Letter P) <input type="checkbox"/> A Fisheries Act authorization with SARA conditions should be sought (Letter F2)
<b>Rationale:</b> Habitat destruction ( $5,462 \text{ m}^2$ ) and permanent alteration ( $661 \text{ m}^2$ ) from infilling behind the bulkhead wall, installation of seven working template piles, and installation of the western outfall will affect foraging, refuge, rearing, migration and spawning rocky and soft-sediment habitat for invertebrate and finfish species. Pile installation will result in habitat destruction ( $455 \text{ m}^2$ ) affecting rearing, foraging, and spawning soft sediment habitat for invertebrate and finfish species will result in a localized effect to fish and fish habitat.	

Reviewed by:	Aiston Bonamis
Date:	August 4, 2017
Comments:	Footprints of WUA #1, WUA #2, WUA#4, and WUA#7 are considered cumulatively, as the impacts occur within the same area, affect the same or similar habitat, and impact the same species.

I concur with the analysis and recommended communication:

Regulatory Review Manager:	Tracey Sandgathe
Date:	 AUG 04 2017
Comments:	

### LIST OF APPENDICIES

**Appendix A** – Figure showing works, undertakings or activities and Project areas.

**Appendix B** - Matrix for determining the course of action for habitat impacts.

**Appendix A – Figure showing works, undertakings or activities and project areas.**

**Figure 1: Project components associated with construction of the Westridge Marine Terminal Expansion from the Application for Authorization.**

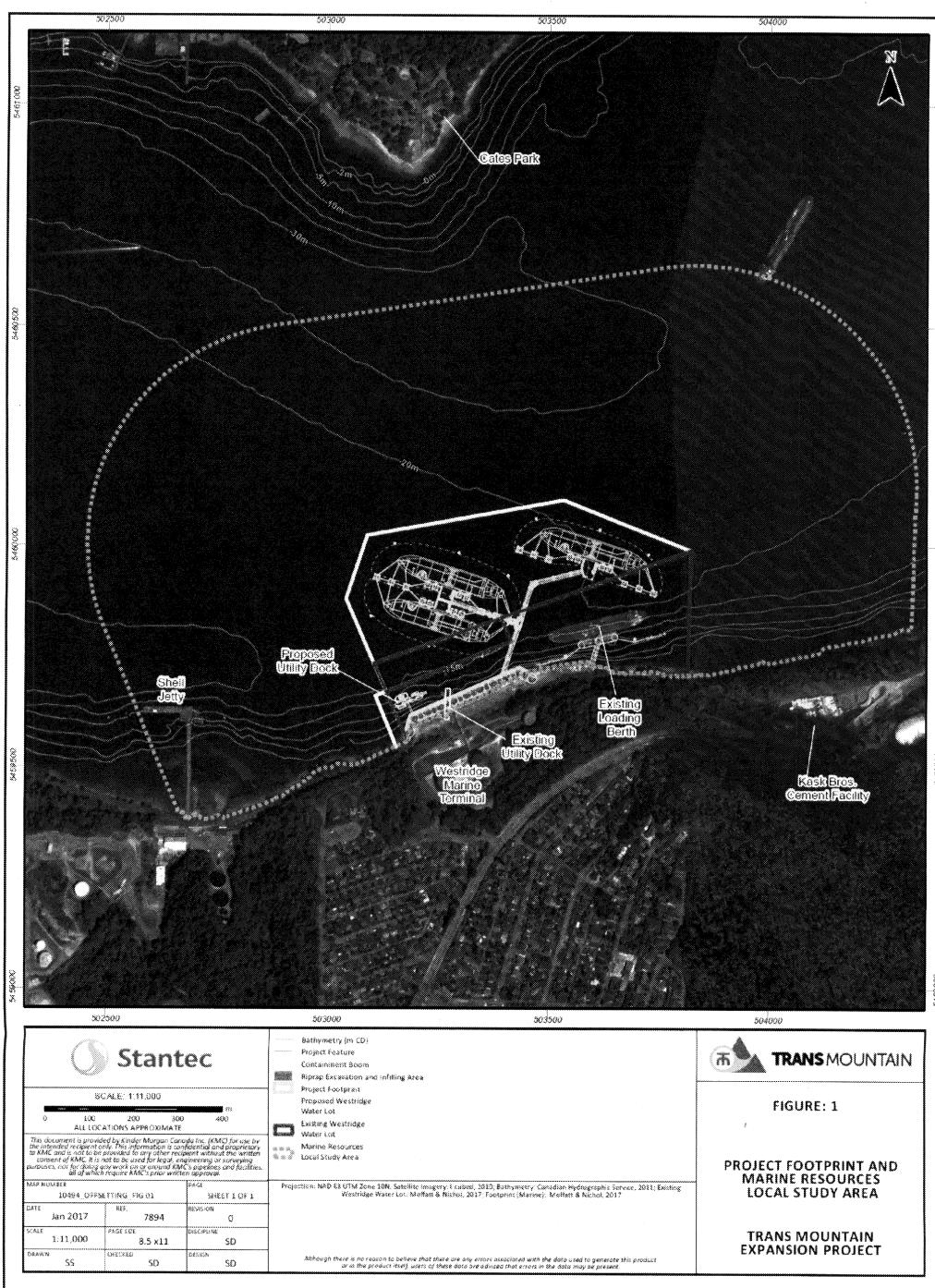
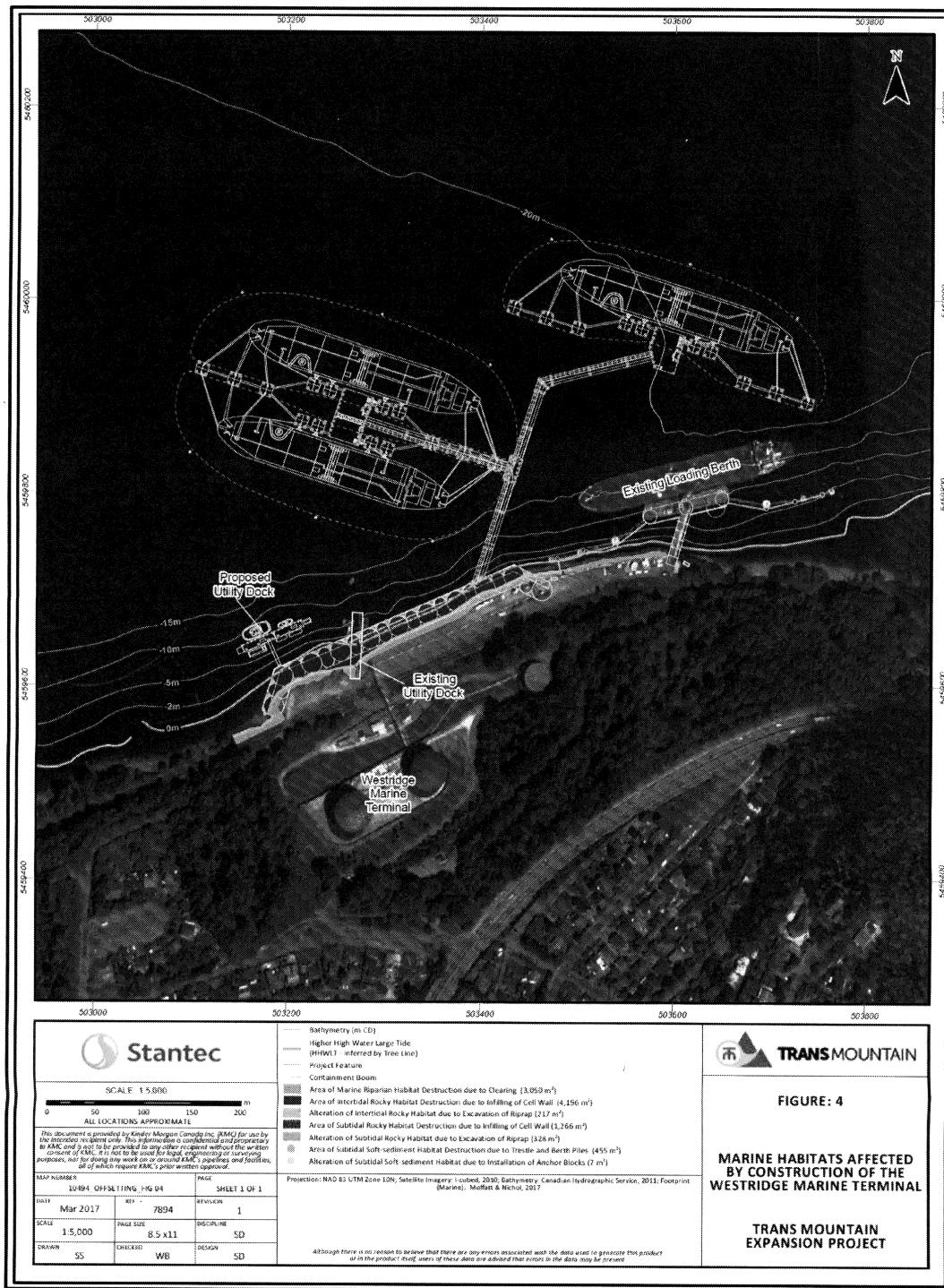


Figure 2: Project footprint effects on fish and fish habitat from the Application for Authorization.

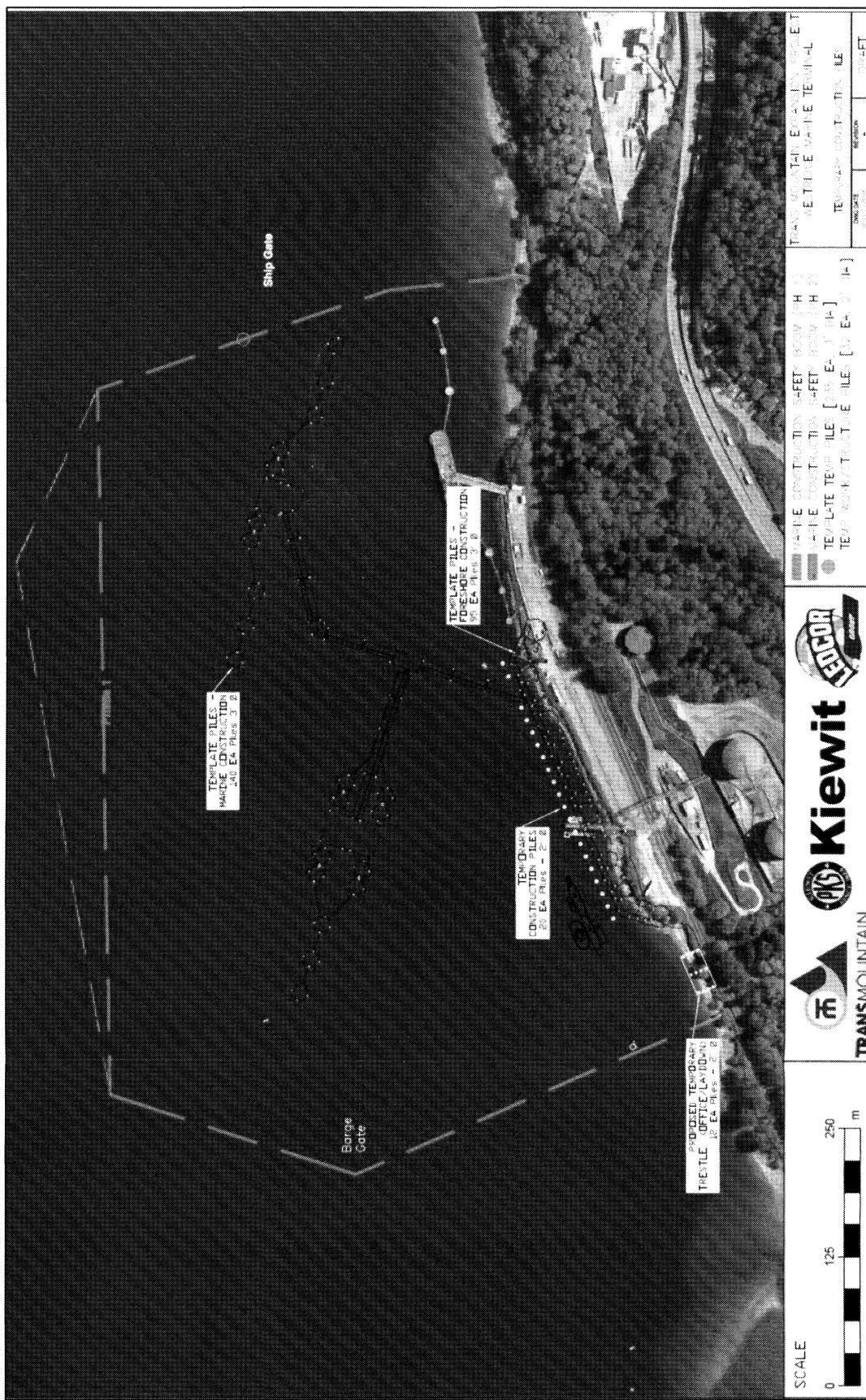


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Valid until February 28, 2017

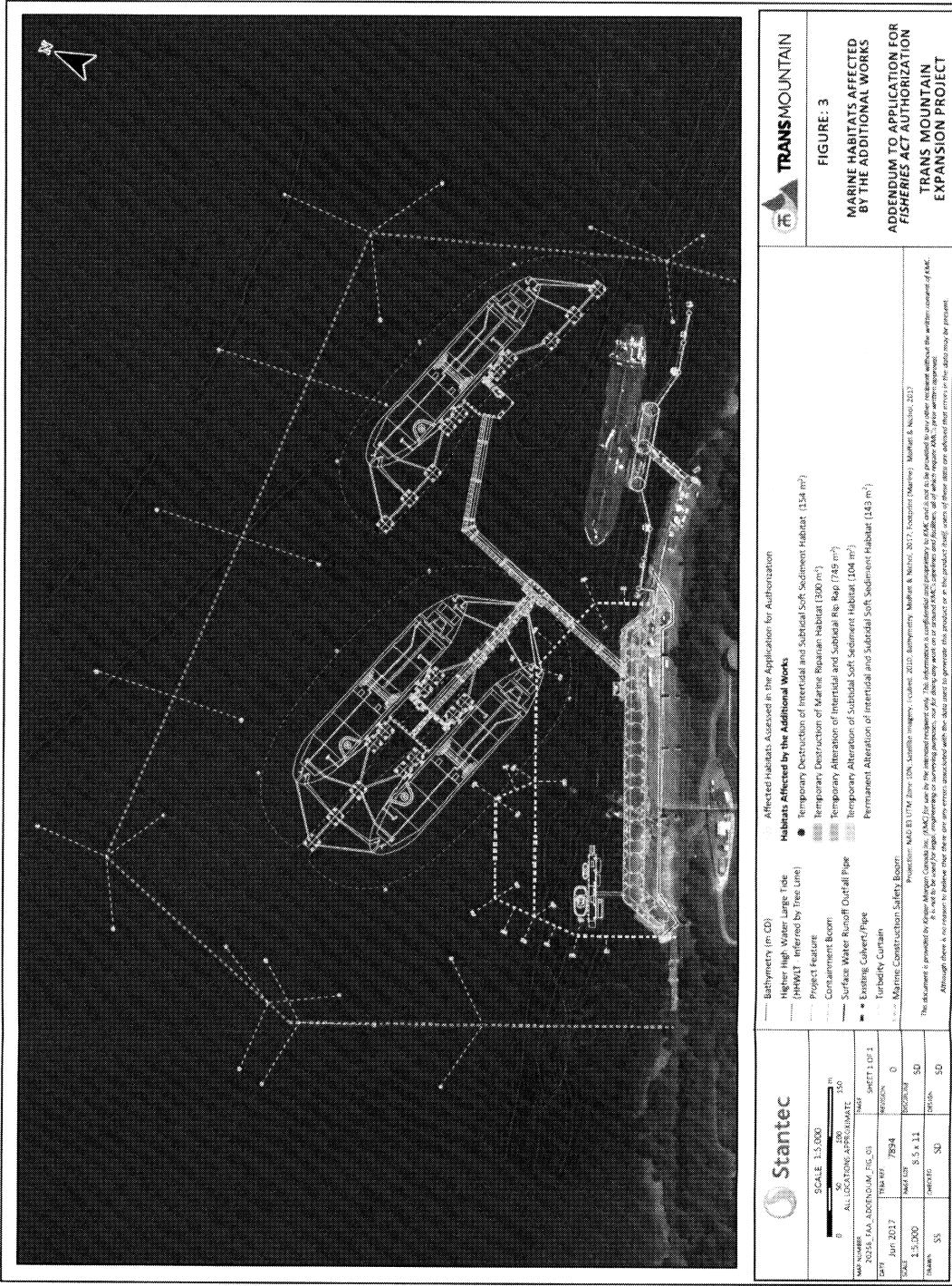
**Figure 3: Project components associated with construction of the Westridge Marine Terminal Expansion that are included in the Addendum to Trans Mountain's Application for a Fisheries Act authorization.**



Figure 4: Locations of Template piles and Working piles included in the Addendum to Trans Mountain's Application for a Fisheries Act authorization.



**Figure 5: Summary of Habitat Impacts resulting from Additional Works included in the Addendum to Trans Mountain's Application for a Fisheries Act Authorization.**



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Version 2, November 30, 2016

Valid until February 28, 2017

**Appendix B - Matrix for determining the course of action for habitat impacts only.** Green squares recommend issuance of a letter of advice that includes site-specific avoidance and mitigation measures. Red squares recommend that the proponent submit an application for Fisheries Act authorization (with or without SARA conditions as appropriate).

Figure 3 of the *Interim Localized Effect Assessment and Documentation Record (LEADR) Guidance for the Fisheries Protection Program*.

		Function and condition of fish habitat				
		No habitat	Low	Average	Important	Exceptional
Size of impact (m <sup>2</sup> )	Category					
	<100					
	100-250					
	250-500					
	500-1000					
	1000 - 5 000					
	5 000-10 000					
	>10 000					

## Summary of Offsetting - Westridge Marine Terminal Expansion, Trans Mountain Expansion Project

### Overview

On February 6, 2017, Trans Mountain Pipeline ULC (the Proponent) submitted an Application for Authorization under Paragraph 35(2)(b) of the *Fisheries Act* to the Department of Fisheries and Oceans Canada (DFO), for works, undertakings or activities associated with the expansion of the existing Westridge Marine Terminal (the Application of Authorization), which is a component of the Trans Mountain Pipeline Expansion Project (the TMX Project). The Application for Authorization includes an Offsetting Plan which is required pursuant to the *Applications for Authorization under Paragraph 35(2)(b) of the Fisheries Act Regulations*, and is intended to offset potential impacts to fish and fish habitat from construction of the terminal expansion. On June 20, 2016, the Proponent submitted an addendum to the Application for Authorization (the Addendum), which includes information on additional proposed works, undertakings or activities pertaining the terminal expansion that were not included in the Application for Authorization. The Proponent was of the view that the additional proposed works, undertakings or activities included in the Addendum would not require additional offsetting, as adequate offsetting had already been proposed within the Application for Authorization.

DFO reviewed the Application for Authorization and the Addendum, and completed a Localized Effects Assessment and Document Record (LEADR) to identify the specific works, undertakings or activities that are likely to result in serious harm to fish. These proposed works, undertakings or activities include:

- Installation of an approximately 363 m long bulkhead wall constructed via:
  - excavation of existing shoreline riprap and foreshore substrates;
  - installation of circular sheet pile cells to form the bulkhead wall; and
  - infilling within the circular sheet pile cells and backfilling of the area between the existing shoreline at the terminal and the bulkhead wall.
- Installation of permanent piles for the construction of three new loading berths, an access trestle, a utility dock, and a foam water supply pump house platform;
- Installation of working piles in the upper intertidal zone to support a marine construction office; and
- Installation of a surface water run-off outfall at the western end of the terminal foreshore expansion within the upper intertidal zone.

The total footprint impacts to fish habitat (6,578 m<sup>2</sup>) anticipated to result in serious harm include:

- Habitat destruction (5,462 m<sup>2</sup>) and permanent alteration (661 m<sup>2</sup>) from infilling behind the bulkhead wall, installation of working template piles for the marine construction office, and installation of the western outfall that will affect foraging, refuge, rearing, migration and spawning rocky and soft-sediment habitat for invertebrate and finfish species; and
- Habitat destruction (455 m<sup>2</sup>) from installation of permanent piles associated with construction of the trestle and berths, affecting rearing, foraging, and spawning soft sediment habitat for invertebrate and finfish species will result in a localized effect to fish and fish habitat.

The rocky intertidal and subtidal habitat (primarily riprap) affected by the proposed works, undertakings or activities provides spawning, rearing, refuge and foraging opportunities for finfish including rockfish, lingcod, Pacific salmon, and Pacific herring). Soft-sediment subtidal habitat provides foraging, rearing, migration, and spawning opportunities for invertebrates (e.g., Dungeness crab) and finfish species (e.g., Pacific salmon, Pacific herring, and rockfish). To offset impacts to fish habitat, the Proponent is proposing to construct a rock-reef complex (approximately 9,011 m<sup>2</sup>) in the vicinity of the terminal expansion as described below.

### **Offsetting Measures**

The Proponent is proposing to construct a rock-reef complex in the southwest corner of the terminal's water lot (see Appendix – Figure 1) to offset potential serious harm to fish from the proposed works, undertakings or activities. The rock-reef will cover an area of 9,011 m<sup>2</sup>, resulting in a habitat offsetting ratio of approximately 1.4:1. The Proponent anticipates that this offset ratio will offset losses to fisheries productivity from the proposed works, undertakings or activities and will also account for temporal lags associated with the onset in the productivity of the new habitat created.

The rock-reef complex will be made up of three different types of reefs overlapping the intertidal and subtidal zones in the vicinity of the foreshore expansion, including:

1. **Nursery reefs** – composed of two reef components, covering an area of 3,880 m<sup>2</sup> and made-up of a 1.5 m thick layer of large cobbles and small boulders, intended to provide refuge for juvenile fish, including juvenile rockfish and salmon;
2. **Integrated reefs** – composed of three components, covering an area of 2,193 m<sup>2</sup> with 1/3 low-relief and 2/3 high-relief rocky habitat for juvenile and adult rockfish; and
3. **Adult reefs** – composed of five components, covering 2,938 m<sup>2</sup> and made-up of a 1.5 m thick layer of medium-large boulders intended to provide refuge habitat for adult rockfish.

The reefs will be located primarily in the photic zone of nearshore waters, and have been designed to include channels of soft substrate. The rock reefs will mostly be constructed on soft-sediment substrate, extending 1.5 – 2 m onto the seafloor and placed within 0 – 13 m below chart datum.

The proposed rock reefs will primarily benefit groundfish species, such as rockfish and lingcod, but will also provide valuable habitat for juvenile salmon and invertebrates, such as Dungeness crab, barnacles, mussels and sea stars. The rock reefs are anticipated to enhance primary and secondary productivity in the area and will increase the diversity of fish associated with rock reefs. Their location in nearshore waters will likely promote the growth and establishment of algal species, and will provide rearing and refuge habitat for migratory species that travel along the shore, such as juvenile salmon. The soft-substrate channels that will be built into the reefs will provide corridors for benthic species to travel through.

### DFO's Assessment of the Offsetting:

The design of the proposed rock reef offsetting is in line with DFO's *Fisheries Productivity Investment Policy: A Proponent's Guide to Offsetting* (the "Policy"), which defines offsetting measures as "measures that are undertaken to counterbalance unavoidable serious harm to fish resulting from a project, with the goal of maintaining or improving the productivity of the commercial, recreational or Aboriginal fishery." Furthermore, the location of the offsetting in the vicinity of the project impact is also consistent with the Policy, which notes that "when determining the location for offsetting, offsets that occur within the vicinity of the project or within the same watershed are preferable." The rock-reef offsetting satisfies the guiding principles of the Policy as follows:

*Principle 1: Offsetting measures must support fisheries management objectives or local restoration priorities.*

The rock-reef offsetting is designed to provide habitat for inshore rockfish and is located within the Eastern Burrard Inlet Rockfish Conservation Area (RCA). Consistent with DFO's *Rockfish Conservation Strategy*, the rock-reef offsetting helps to protect and conserve rockfish populations and provides habitat to help maintain the productivity of inshore rockfish species, including the copper and quillback rockfish. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assessed the quillback rockfish as threatened in 2009. The rock-reef offsetting will help maintain or enhance local populations for this species, and thus helps support local restoration priorities within the RCA.

*Principle 2: Benefits from offsetting measures must balance project impacts.*

Construction of the rock-reef habitat is anticipated to result in an offsetting ratio of approximately 1.4:1. DFO is of the view that this offset ratio will adequately offset losses to commercial, recreational and Aboriginal (CRA) fisheries productivity from the works, undertakings or activities anticipated to result in serious harm to fish. In addition, to counterbalancing unavoidable residual serious harm to fish, the higher offsetting ratio (i.e., > 1:1) will adequately account for temporal lags associated with colonization of the new reef habitat, and the establishment and development of primary and secondary productivity. The reefs are anticipated to increase habitat complexity and diversity in the vicinity of the terminal, thereby increasing species richness and diversity, and overall productivity.

*Principle 3: Offsetting measures must provide additional benefits to the fishery.*

In addition to counterbalancing potential residual serious harm to fish and accounting for temporal lags in the onset of the productive capacity, over time, the habitat created in excess of the 1:1 ratio should provide additional benefits to CRA fisheries in the longer-term. Furthermore, the rock reef offsetting has been designed to enhance the structural complexity of the fish habitat in the area beyond what is currently present, by increasing the availability of interstitial spaces within the vertical profile of the water column, which will provide valuable foraging and refuge habitat for marine fish and invertebrates. For examples, the seaward extent of the rock reefs is adjacent to soft-sediment areas most likely to be used by Dungeness crabs (i.e., around depths of -13 to -18 CD based on sampling data provided by the Proponent). The reefs are thus located at depths that minimize impacts to Dungeness crabs while

increasing primary and secondary productivity, enhancing foraging and refuge habitat for Dungeness crabs. In addition, because the reefs are located in the vicinity of a DFO's Important Area for Dungeness Crabs, the productivity generated by the reefs may serve to benefit crab populations in this area as well. The added structural complexity of the reefs is anticipated to provide habitat for a greater overall diversity of species.

*Principle 4: Offsetting measures must generate self-sustaining benefits over the long term.*

The proposed rock reefs have been designed to increase structural habitat complexity in comparison to existing marine fish habitat within the proposed footprint of the terminal expansion. The existing habitat consists largely of rocky rip-rap intertidal and subtidal substrate, which was used to armour the face of the existing terminal, along with areas of sandy soft-bottom sediment which are common throughout Burrard Inlet. By replacing this habitat with the proposed rock reefs, the availability and diversity of interstitial spaces within the vertical profile of the water column will be increased. The result is new fish habitat that will provide increased foraging, refuge, and rearing habitat for a diversity of species, primarily targeting rockfish but also benefiting invertebrates, salmon and other finfish, algal species, and other species of the nearshore. Providing the reefs function as intended and are not disturbed, they should provide valuable habitat for fish and sustain CRA fisheries productivity over the long-term.

To ensure that the rock reefs are functioning as intended and are effective at offsetting any residual serious harm to fish associated with the terminal expansion, DFO has included conditions within its Draft Conditions of Authorization related to implementation and monitoring of the offsetting measures. DFO has also included conditions that ensure the implementation of contingency measures, as committed to by the Proponent in the Application for Authorization, should monitoring indicate that the offsetting is not functioning as intended (Conditions 4.1 – 4.6).

Contingency offsetting measures are intended to be implemented in the event that the rock reef complex is not functioning as intended. These contingency offsetting measures could include altering the existing reef components to improve their effectiveness as fish habitat, constructing additional rock-reef offsetting at an alternate site, or potentially purchasing habitat banking (e.g., from the Vancouver Fraser Port Authority).

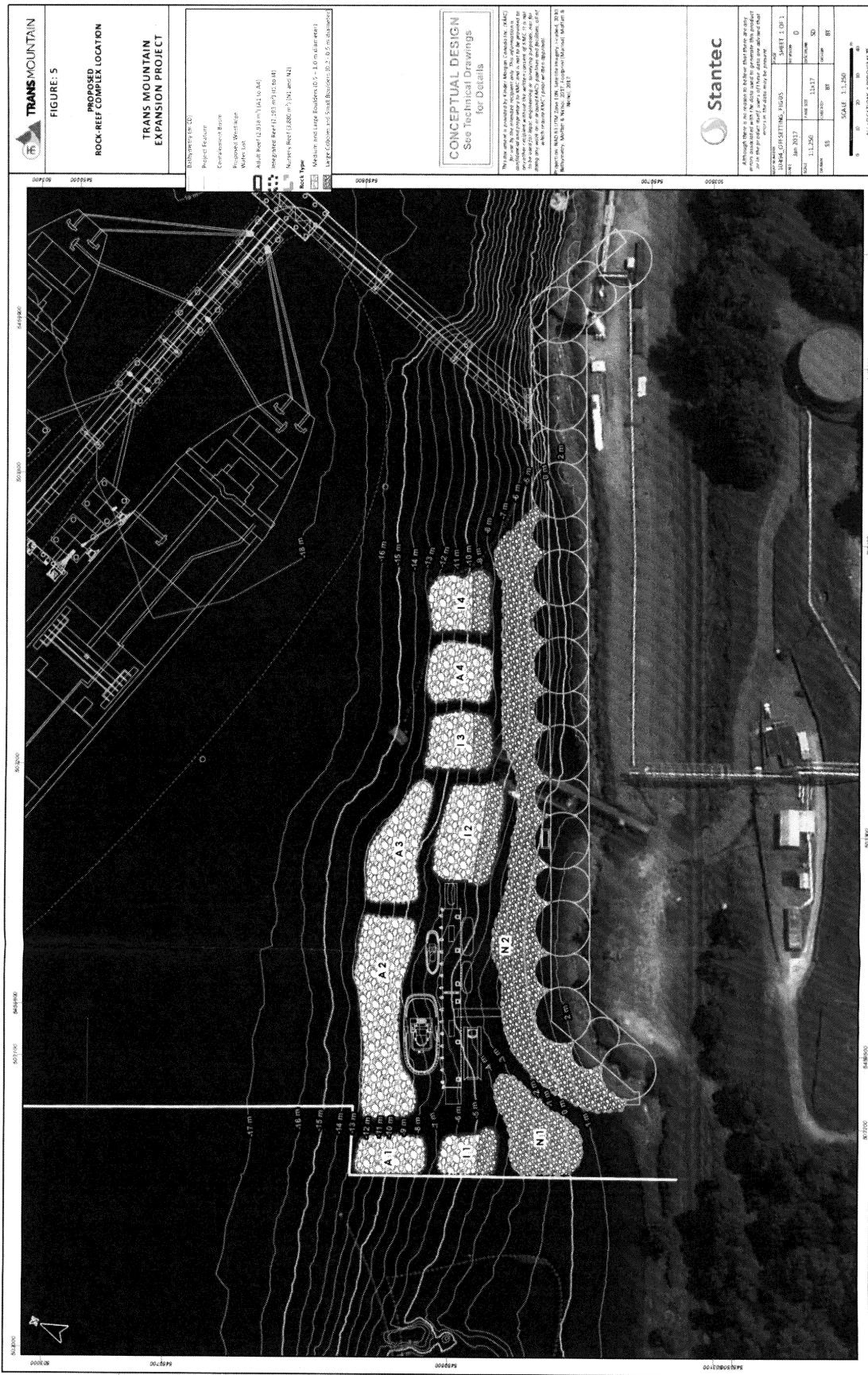
The Vancouver Fraser Port Authority (VFPA) has also reviewed the proposed offsetting as part of their permitting process, and support implementation of these measures.

### **Consultation with Aboriginal Groups**

DFO is currently consulting with 33 Aboriginal groups in relation to the proposed works, undertakings or activities, the anticipated effects on fish and fish habitat, and the mitigation and offsetting measures proposed to minimize and offset impacts to fish and fish habitat. Several Aboriginal groups (i.e., Musqueam Indian Band, Tsleil-Waututh Nation, and Halalt First Nation) have provided comments in relation to the offsetting plan, that have assisted DFO in drafting the conditions of a potential *Fisheries Act* authorization to help better ensure the efficacy and functioning of the proposed rock reef offsetting.

ANNEX

Figure 1: Design of the proposed rock-reef complex offsetting measure (please reference "Appendix C – Rock-reef Complex Conceptual Designs", in the Application for more detailed drawings)



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<b>Project Name :</b>	Trans Mountain Expansion Project - Westridge Marine Terminal Expansion
<b>Name of the waterbody :</b>	Burrard Inlet
<b>PATH #</b>	17-HPAC-00071
<b>Name of the nearest location :</b>	Burnaby, BC
<b>Water body Types(s) :</b>	<input type="checkbox"/> Freshwater <input checked="" type="checkbox"/> Marine <input type="checkbox"/> Estuarine
<b>Proponent :</b>	Trans Mountain Pipeline ULC.
<b>Reg. Review Unit :</b>	Oil and Gas
<b>Form prepared by :</b>	Alston Bonamis

## ***Section 1 - Project Description:***

The Trans Mountain Expansion Project (the Project or TMX) is a proposal to expand the existing Trans Mountain pipeline system between Edmonton, Alta. and Burnaby, B.C. It involves approximately 987 km of new pipeline, new and modified facilities, such as pump stations and tanks, and the reactivation of 193 km of existing pipeline. Trans Mountain Pipeline ULC (the Proponent) also proposes to expand the Westridge Marine Terminal located in Burrard Inlet (the Terminal) to accommodate 34 tankers per month (up from 5 per month). The Terminal is located in the Central Harbour of Burrard Inlet, within the Port of Vancouver, to the east of the Second Narrows Bridge and south of the entrance to Indian Arm, in Burnaby, B.C.

## ***Section 2 – Consultation Overview:***

This section was intended to detail the outcomes of consultation activities carried out through the regulatory phase prior to DFO making a decision on potential issuance of a *Fisheries Act* authorization; however, it has been replaced with the document titled: "*Indigenous Consultation Summary Report – Westridge Marine Terminal Expansion, Trans Mountain Expansion Project*".

## ***Section 3 – Approach to Consultation:***

In fulfilling its duty to consult, Fisheries and Oceans Canada (DFO or the Department) is relying on information and knowledge gathered through Crown consultation activities conducted during the environmental assessment (EA) phase of the project review, and described within the *Joint Federal/Provincial Consultation and Accommodation Report for the Trans Mountain Expansion Project*, including Appendices. DFO is also relying on information provided by the Proponent within its Facilities Application to the National Energy Board (NEB) (e.g., Traditional Land Use Studies), information filed by individual Aboriginal groups on the NEB Registry (e.g., written evidence, information requests, written argument-in-chief, oral summary arguments, etc.), and information provided within the NEB's Recommendation Report to the Governor-in-Council.

### **Identification of Aboriginal Groups to be consulted:**

Thirty-three Aboriginal groups that exercise or assert rights and/or title in the vicinity of the proposed Terminal expansion have been identified by the Department for consultations associated with the potential issuance of a *Fisheries Act* authorization for the expansion. These groups were identified through a review of the EA record, query of the electronic Aboriginal and Treaty Rights Information System (ATRIS) maintained by Indigenous and

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Northern Affairs Canada (INAC), and by cross-referencing this information with the TMEP Consultation Region GIS mapping tool developed by Natural Resources Canada (NRCan) during the EA.<sup>1</sup>

DFO is only consulting with Aboriginal group where the duty to consult is triggered as a result of potential adverse impacts to asserted or established Aboriginal or Treaty rights. This duty is in large part determined by the scope of consultation as described below, but also considers the preliminary strength of claim of any asserted or established Aboriginal or Treaty rights, and the potential seriousness of impacts to asserted or established Aboriginal or Treaty rights. Where the Proponent has proposed mitigation measures that may avoid impacts to asserted or established Aboriginal rights and title, and the Department agrees that the proposed measures will avoid impacts, a duty to consult may not be triggered. This applies to Aboriginal groups located in the BC Interior along the pipeline right-of-way. Although these groups may potentially harvest Pacific salmon that may occur in the vicinity of the Terminal during their juvenile life stage, the Proponent has proposed to work within a least-risk timing window so as to mitigate impacts to migrating juvenile salmon. Thus, the potential for adverse impacts to asserted or established Aboriginal or Treaty rights (specifically harvesting of salmon) would be avoided.

## Purposes of Consultation:

Under section 35 of the *Constitution Act, 1982* the Crown has a duty to consult and, where appropriate, accommodate when the Crown contemplates conduct that might adversely impact potential or established Aboriginal or Treaty rights. On February 6, 2017, the Proponent submitted an application for an authorization under paragraph 35(2)(b) of the *Fisheries Act* (the Application) to DFO. After reviewing the Application, DFO must determine whether to issue the requested authorization to the Proponent, and in doing so, is contemplating Crown conduct that has the potential to adversely impact Aboriginal and/or Treaty rights. DFO therefore has a duty to consult with (and possibly accommodate) potentially affected Aboriginal groups prior to making a decision on whether to issue or refuse issuance of the *Fisheries Act* authorization.

## Goals of Consultation:

- Carry out early, effective, respectful and meaningful consultation with potentially affected Aboriginal groups on the proposed works, undertakings or activities anticipated to result in serious harm to fish.
- Gain a deeper understanding of the views and interests of Aboriginal groups as it relates to the proposed works, undertakings or activities anticipated to result in serious harm to fish, and associated avoidance, mitigation, and offsetting measures.
- Build and maintain long-term relationships with Aboriginal groups based on a shared interest in reconciliation.
- Fulfil the Crown's duty to consult and uphold the honour of the Crown by exchanging and discussing relevant information and having a two-way dialogue on the impacts of the Project on asserted or established Aboriginal or Treaty rights.

The thirty-three Aboriginal groups identified for consultation in relation to the Application are:

- Tsleil-Waututh Nation
- Squamish Nation
- Musqueam Indian Band
- Stó:lō communities:

<sup>1</sup> The TMEP Consultation Region Mapping Tool developed by NRCan during the EA for the Project is available at: <http://nrcan-rcan.maps.arcgis.com/apps/webappviewer/index.html?id=9c927f41c90f4f4c8c9fe0a9b7f172c4>.

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- Aitchelitz Band
- Chawathil First Nation
- Cheam (Pilalt) First Nation
- Katzie First Nation
- Kwantlen First Nation
- Kwaw-Kwaw-Apilt First Nation
- Kwikwetlem First Nation
- Leq'a:mel First Nation
- Matsqui First Nation
- Peters Band
- Popkum First Nation
- Scowlitz First Nation
- Seabird Island Indian Band
- Shxwha:y Village
- Shxw'ow'hamel First Nation
- Skawahlook First Nation
- Skowkale First Nation
- Skwah First Nation
- Soowahlie Indian Band
- Squiala First Nation
- Sumas First Nation
- Tzeachten First Nation
- Union Bar Band
- Yakweakwioose Band
- Hul'qumi'nun Communities:
  - Cowichan Tribes
  - Halalt First Nation
  - Lake Cowichan First Nation
  - Lyackson First Nation
  - Penelakut Tribe
  - Stz'uminus (Chemainus) First Nation

## Scope of Consultation:

To determine the scope of consultation, the following factors are being considered:

1. The likely geographic extent of potential adverse impacts from the works, undertakings or activities associated with construction of the Terminal expansion on marine fish and fish habitat;
2. The preliminary strength of any asserted Aboriginal rights, and established Aboriginal rights or Treaty rights, within the likely geographic extent of potential impacts (as identified under item 1); and
3. The seriousness of potential adverse impacts on Aboriginal interests resulting from the proposed works, undertakings or activities associated with construction of the Terminal expansion, taking into account mitigation measures.

### **1. Geographic Extent**

Based on the information provided by the Proponent in its Application, and within its Facilities Application to the NEB during the EA process, the Proponent anticipates impacts from construction and operation of the Terminal expansion to occur within the marine local study area (LSA), defined as the area within 500 m of the proposed water lease expansion (Fig. 1). DFO is of the view that the marine LSA boundary selected by the Proponent is appropriate for assessing effects from construction of the Terminal expansion, and noted this in DFO's written

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evidence to the NEB during the EA for the Project. Thus, DFO considers the marine LSA boundary to accurately reflect the likely geographic extent of potential adverse impacts from the works, undertakings or activities associated with construction of the Terminal expansion on marine fish and fish habitat.

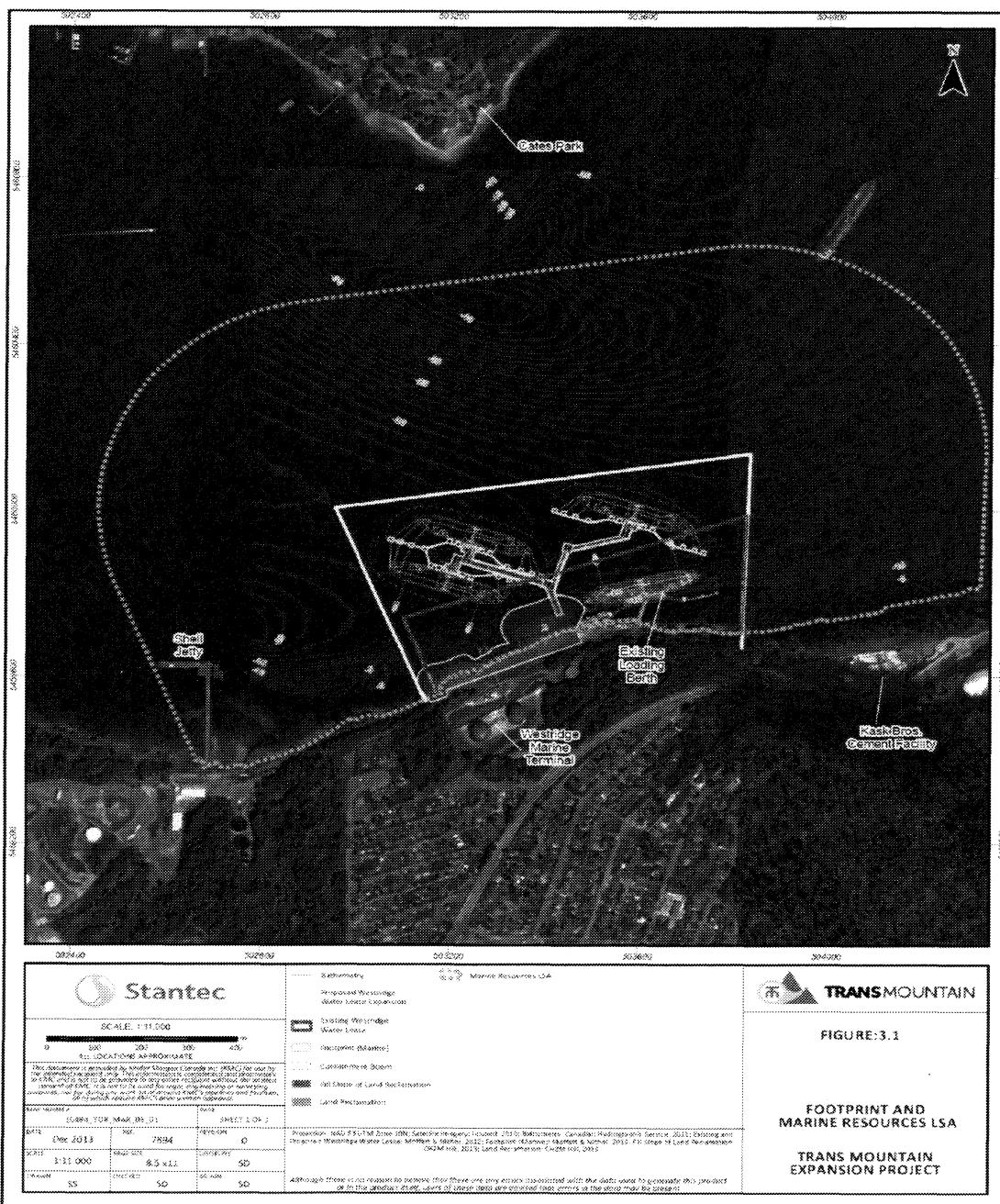


Figure 1: Marine Local Study Area (LSA) for marine fish and fish habitat, and marine mammals (dashed green line).

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## 2. Preliminary Strength of Claim

The Department's preliminary strength of claim assessment relies in large part on the information gathered by the Crown during the EA and documented with the group-specific appendices of the *Joint Federal/Provincial Consultation and Accommodation Report for the Trans Mountain Expansion Project* (the CAR). The Crown's preliminary strength of claim assessment remains unchanged from the EA phase, as there have not been significant changes to exercise or assertions of Aboriginal rights and title in the marine LSA since the close of the EA. However, should consultations with potentially affected Aboriginal groups provide new information to support an alternate assessment, the Department will refine and update its strength of claim assessment as appropriate.

It should be noted that the Department also queried ATRIS to clarify and validate information pertaining to potential or established Aboriginal or Treaty rights within the marine LSA. Once developed, the preliminary strength of claim was also vetted for its appropriateness and accuracy through consultation with the former TMX Major Projects Management Office Crown Consultation Coordinator, the INAC Regional Project lead, and through the Department of Justice.

The Crown's preliminary strength of claim assessment in the CAR for these Aboriginal groups was assessed as ranging from strong to weak. Table 1 identifies each Aboriginal group and the Crown's preliminary strength of claim from the CAR.

Table 1: Preliminary strength of claim assessment summarized from the CAR for Aboriginal groups that exercise or assert rights and/or title in the marine LSA

Aboriginal Group	Preliminary Strength of Claim
Tsleil-Waututh Nation	Strong <sup>2</sup>
Squamish Nation	Moderate to Weak <sup>3</sup>
Musqueam Indian Band	Moderate to Weak <sup>4</sup>
Stó:lō Collective <sup>5</sup>	Weak <sup>6</sup>
Chawathil First Nation	Weak
Cheam (Pilalt) First Nation	Weak

<sup>2</sup> CAR Appendix C – Pg. 70 “The Crown's preliminary assessment of Tsleil-Waututh's claims for Aboriginal rights over the section of the Project that spans the terminus of the pipeline at the Burnaby holding facility to the Fraser River Crossing is assessed as a range from strong to moderate-to-strong *prima facie* Aboriginal rights claims as the pipeline gets closer to the Fraser River.”

<sup>3</sup> CAR Appendix C – Pg. 34 “The Crown's preliminary assessment of Squamish's *prima facie* claim for Aboriginal rights to harvest marine resources within the marine shipping corridor of the Project that spans from the terminus of the pipeline in Burnaby to the portion of the Strait of Georgia that is proximal to the South Arm of the Fraser River is assessed as ranging from moderate to weak.”

<sup>4</sup> CAR Appendix C – Pg. 18 “Within Burrard Inlet, the claim diminishes with increasing distance from the western end, as information indicates that these areas may fall outside of what was considered Musqueam traditional territory at 1846.”

<sup>5</sup> The Stó:lō Collective represents 13 closely related Aboriginal groups: Aitchelitz First Nation (Aitchelitz), Kwaw-Kwaw-Apilt First Nation (Kwaw-Kwaw-Apilt), Leq'á:mel First Nation (Leq'á:mel), Shxwhá:y Village (Shxwhá:y), Skawahlook First Nation (Skawahlook), Skwah First Nation (Skwah), Skowkale First Nation (Skowkale), Soowahlie Indian Band (Soowahlie), Sq'léwlets (Scowlitz) First Nation, Squiala First Nation (Squiala), Sumas First Nation (Sumas), Tzeachten First Nation (Tzeachten), and Yakweakwioose First Nation (Yakweakwioose). Given the Stó:lō Collective's view that each member First Nation has a different form of relation to rights and title, the Crown attempted to revise its approach and aggregate the preliminary strength of claim analyses in the CAR while preserving the Crown's understanding of the ancestral connection to historic groupings and areas. Note that for the purposes of consulting on the proposed *Fisheries Act* authorization for the Westridge Marine Terminal expansion, DFO targeted Stó:lō communities, rather than the smaller collective, which increased the breadth of consultation.

<sup>6</sup> CAR Appendix C – Pg. 247 “Within the portion of the shipping route [i.e., in Burrard Inlet] that falls within Stó:lō Collective's asserted traditional territory, there is a weaker case for Aboriginal rights given a lack of information to indicate that this area was associated with the member communities of the Stó:lō Collective.”

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Aboriginal Group	Preliminary Strength of Claim
Katzie First Nation	Weak
Kwantlen First Nation	Weak
Kwikwetlem First Nation	Weak
Matsqui First Nation	Weak
Peters Band	Weak
Popkum First Nation	Weak
Seabird Island Indian Band	Weak
Shxw'ow'hamel First Nation	Weak
Union Bar Band	Weak
Hul'qumi'num Communities	Weak <sup>7</sup>

### 3. Pre-consultation Assessment of Seriousness of Potential Adverse Impacts to Aboriginal Interests

The Crown's assessment in the CAR of the seriousness of overall potential adverse impacts from the Project to Aboriginal rights was based on the effects of: (1) construction and operation of the Terminal expansion; (2) project-related marine shipping; and (3) construction and operation of the pipeline. DFO's Crown conduct when contemplating whether to issue a *Fisheries Act* authorization however is limited to works, undertakings or activities associated with construction of the Terminal expansion and within the discrete bounds of the marine LSA. As such, DFO has conducted its own pre-consultation assessment on the seriousness of impacts to Aboriginal interests, which relies primarily on information from the CAR, the NEB Registry, and information provided by the Proponent in its Application. Should consultations with potentially affected Aboriginal groups provide additional information; the Department will refine and update its assessment of the seriousness of impacts to Aboriginal interests as appropriate.

Table 2: Pre-consultation assessment on the seriousness of impacts for Aboriginal groups that exercise or assert rights and/or title in the marine LSA

Aboriginal Group	Seriousness of Potential Adverse Impacts to Rights			Overall Impact to Rights
	Hunting, Trapping and Plant Gathering	Marine Fishing and Harvesting	Other Traditional and Cultural Activities	
Tsleil-Waututh Nation	Minor	Moderate	Moderate	Moderate
Squamish Nation	Minor	Minor	Minor	Minor
Musqueam Indian Band	Minor	Minor	Minor	Minor
Stó:lō Collective <sup>8</sup>	Negligible	Minor to Negligible	Negligible	Minor to Negligible
Chawathil First Nation	Negligible	Minor to Negligible	Negligible	Minor to Negligible

<sup>7</sup> The CAR notes that the term 'Cowichan people' as used in the Preliminary Strength of Claim Assessment includes all six HTG member nations (Cowichan Tribes, Lake Cowichan, Halalt, Stz'uminus, Lyackson and Penelakut). Thus, the Strength of claim assessment applies to all these groups and is the same for all the groups. CAR Appendix D – Pg. 3 "Areas of weak claims include areas proximal to the Strait of Georgia north of Gabriola passage and north and south of the South arm of the Fraser River, the Strait of Georgia south of Active Pass, and areas within Haro and Juan de Fuca Straits, which were not considered within the pre-contact traditional territory of Cowichan people."

<sup>8</sup> The Stó:lō Collective represents 13 closely related Aboriginal groups: Aitchelitz First Nation (Aitchelitz), Kwaw-Kwaw-Apilt First Nation (Kwaw-Kwaw-Apilt), Leg̓á:mel First Nation (Leg̓á:mel), Shxwhá:y Village (Shxwhá:y), Skawahlook First Nation (Skawahlook), Skwah First Nation (Skwah), Skowkale First Nation (Skowkale), Soowahlie Indian Band (Soowahlie), Sq'ewlets (Scowitz) First Nation, Squiala First Nation (Squiala), Sumas First Nation (Sumas), Tzeachten First Nation (Tzeachten), and Yakweakwoose First Nation (Yakweakwoose). Given the Stó:lō Collective's view that each member First Nation has a different form of relation to rights and title, the Crown attempted to revise its approach and aggregate the preliminary strength of claim analyses in the CAR while preserving the Crown's understanding of the ancestral connection to historic groupings and areas. Note that for the purposes of consulting on the proposed *Fisheries Act* authorization for the Westridge Marine Terminal expansion, DFO targeted Stó:lō communities, rather than the smaller collective, which increased the breadth of consultation.

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Aboriginal Group	Seriousness of Potential Adverse Impacts to Rights			Overall Impact to Rights
	Hunting, Trapping and Plant Gathering	Marine Fishing and Harvesting	Other Traditional and Cultural Activities	
Cheam (Pilalt) First Nation	Negligible	Minor to Negligible	Negligible	Minor to Negligible
Katzie First Nation	Negligible	Minor to Negligible	Negligible	Minor to Negligible
Kwantlen First Nation	Negligible	Minor to Negligible	Negligible	Minor to Negligible
Kwikwetlem First Nation	Negligible	Minor to Negligible	Negligible	Minor to Negligible
Matsqui First Nation	Negligible	Minor to Negligible	Negligible	Minor to Negligible
Peters Band	Negligible	Minor to Negligible	Negligible	Minor to Negligible
Popkum First Nation	Negligible	Minor to Negligible	Negligible	Minor to Negligible
Seabird Island Indian Band	Negligible	Minor to Negligible	Negligible	Minor to Negligible
Shxw'ow'hamel First Nation	Negligible	Minor to Negligible	Negligible	Minor to Negligible
Union Bar Band	Negligible	Minor to Negligible	Negligible	Minor to Negligible
Hul'qumi'num Communities	Negligible	Negligible	Negligible	Negligible

## Section 4 – Depth of Consultation:

DFO's assessment of the preliminary depth of consultation assessment for each group is based on its understanding of an individual Aboriginal group's preliminary strength of claim and the seriousness of impacts to potential Aboriginal rights and title. The preliminary depth of consultation assessment in Table 3 below was generated to always reflect the highest rating of either the preliminary strength of claim or the seriousness of impact for an individual group, thereby favouring deeper and more meaningful consultation.

Table 3: Pre-consultation assessment of preliminary Depth of Consultation for Aboriginal groups that exercise or assert rights and/or title in the marine LSA

Aboriginal Group	Preliminary Strength of Claim	Seriousness of Impact	Preliminary Depth of Consultation
Tsleil-Waututh Nation	Strong	Moderate	High
Squamish Nation	Moderate to Weak	Minor	Moderate
Musqueam Nation	Moderate to Weak	Minor	Moderate
Stó:lō Collective <sup>9</sup>	Weak	Minor to	Low

<sup>9</sup> The Stó:lō Collective represents 13 closely related Aboriginal groups: Aitchelitz First Nation (Aitchelitz), Kwaw-Kwaw-Apilt First Nation (Kwaw-Kwaw-Apilt), Leq'á:mel First Nation (Leq'á:mel), Shxwhá:y Village (Shxwhá:y), Skawahlook First Nation (Skawahlook), Skwah First Nation (Skwah), Skowkale First Nation (Skowkale), Soowahlie Indian Band (Soowahlie), Sq'ewlets (Scowlitz) First Nation, Squala First Nation (Squala).

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Aboriginal Group	Preliminary Strength of Claim	Seriousness of Impact	Preliminary Depth of Consultation
Chawathil First Nation	Weak	Negligible	Low
Cheam (Pilalt) First Nation	Weak	Minor to Negligible	Low
Katzie First Nation	Weak	Minor to Negligible	Low
Kwantlen First Nation	Weak	Minor to Negligible	Low
Kwikwetlem First Nation	Weak	Minor to Negligible	Low
Matsqui First Nation	Weak	Minor to Negligible	Low
Peters Band	Weak	Minor to Negligible	Low
Popkum First Nation	Weak	Minor to Negligible	Low
Seabird Island Indian Band	Weak	Minor to Negligible	Low
Shxw'ow'hamel First Nation	Weak	Minor to Negligible	Low
Union Bar Band	Weak	Minor to Negligible	Low
Hul'qumi'num Communities	Weak	Negligible	Low

Although the preliminary depth of consultation assessment in Table 3 provides three category ratings for the preliminary depth of consultation, in practice, DFO's consultation activities are scoped along two streams; one for groups owed a 'low' depth of consultation and one for groups owed a 'moderate' or 'high' depth of consultation.

## ***Section 5 - Process of Consultation:***

### **1) Groups owed a Moderate or High Preliminary Depth of Consultation:**

For groups on the moderate to high end of the consultation spectrum, DFO will:

- provide written correspondence describing the scope of the works, undertakings or activities associated with the proposed Terminal expansion, and include maps depicting the location of works, fish habitat potentially impacted, and a description of the fish habitat offsetting measures proposed;
- provide a copy of the Application for Authorization or the Draft Conditions of Authorization;
- respond to comments in writing received from individual groups;
- meet via conference call or in-person, at a location convenient to the Indigenous group, to discuss concerns or issues, or address technical aspects of the works, undertakings or activities associated with the proposed Terminal expansion; and

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Sumas First Nation (Sumas), Tzeachten First Nation (Tzeachten), and Yakweakwoose First Nation (Yakweakwoose). Given the Stó:lō Collective's view that each member First Nation has a different form of relation to rights and title, the Crown attempted to revise its approach and aggregate the preliminary strength of claim analyses in the CAR while preserving the Crown's understanding of the ancestral connection to historic groupings and areas. Note that for the purposes of consulting on the proposed *Fisheries Act* authorization for the Westridge Marine Terminal expansion, DFO targeted Stó:lō communities, rather than the smaller collective, which increased the breadth of consultation.

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- coordinate meetings with the Vancouver Fraser Port Authority to the extent possible to minimize burdens in terms of capacity and resourcing for Indigenous groups.

### 2) Groups owed a Low Preliminary Depth of Consultation:

For groups on the lower end of the consultation spectrum, DFO will:

- provide written correspondence describing the scope of the works, undertakings or activities associated with the proposed Terminal expansion, and include maps depicting the location of works, fish habitat potentially impacted, and a description of the fish habitat offsetting measures proposed;
- respond to comments in writing received from individual groups;
- meet via conference call to discuss concerns or issues, or address technical aspects of the works, undertakings or activities associated with the proposed terminal expansion; and

DFO will not provide a copy of the Application for Authorization or the Draft Conditions of Authorization, unless a specific request is received from individual groups.

# **INDIGENOUS CONSULTATION SUMMARY REPORT –**

## **WESTRIDGE MARINE TERMINAL EXPANSION,**

## **TRANS MOUNTAIN EXPANSION PROJECT**

**Fisheries and Oceans Canada  
Vancouver, BC**



**Fisheries and Oceans  
Canada**      **Pêches et Océans  
Canada**

**Canada**

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## Indigenous Consultation Summary Report - Trans Mountain Expansion Project – Westridge Marine Terminal Expansion

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### **Project Overview:**

The Trans Mountain Expansion (“TMX”) Project is a proposal to expand the existing Trans Mountain pipeline system between Edmonton, AB and Burnaby, BC. It involves approximately 987 km of new pipeline, new and modified facilities, such as pump stations and tanks, and the reactivation of 193 km of existing pipeline. A component of the TMX Project is the expansion of the Westridge Marine Terminal (the “Terminal”) located in Burrard Inlet to accommodate 34 tankers per month (up from 5 per month). On November 29, 2016, the Governor in Council approved the TMX project subject to the 157 conditions identified by the National Energy Board (“NEB”), and on December 1, 2016, the NEB issued a Certificate of Public Convenience and Necessity to Trans Mountain Pipeline ULC (the “Proponent” or “Trans Mountain”) allowing the TMX Project to proceed.

On February 6, 2017, the Proponent submitted an Application for Authorization (the “Application for Authorization”) under Paragraph 35(2)(b) of the *Fisheries Act* to the Department of Fisheries and Oceans Canada (DFO), for works, undertakings or activities associated with the expansion of the existing Westridge Marine Terminal. On June 20, 2017, DFO received an addendum to the Application for Authorization from the Proponent (the “Addendum”) providing information on additional proposed works, undertakings or activities that were not included in the Application for Authorization. DFO reviewed the Application for Authorization and the Addendum, and determined that the following works, undertakings or activities are likely to result in serious harm to fish:

- Installation of an approximately 363 m long bulkhead wall constructed via:
  - excavation of existing shoreline riprap and foreshore substrates;
  - installation of circular sheet pile cells to form the bulkhead wall; and
  - infilling within the circular sheet pile cells and backfilling of the area between the existing shoreline at the terminal and the bulkhead wall.
- Installation of piles in Burrard Inlet (including forty-eight 1,829 mm diameter piles, forty-eight 2,286 mm diameter piles, and eighty-nine 1,372 mm diameter piles);
- Installation of working piles (610 mm diameter) in the upper intertidal zone to support a marine construction office; and
- Installation of a surface water run-off outfall at the western end of the terminal foreshore expansion within the upper intertidal zone.

### **Overview of Consultation:**

DFO identified thirty-three Indigenous groups that may have asserted or established Aboriginal or Treaty rights in the vicinity of the Terminal, and engaged in consultation with these groups in relation to its contemplated Crown conduct regarding potential issuance of a *Fisheries Act* authorization for the works, undertakings or activities described above. These Indigenous groups were identified through a review of the Environmental Assessment (EA) record for the TMX Project, query of the electronic Aboriginal and

Treaty Rights Information System (ATRIS) maintained by Indigenous and Northern Affairs Canada (INAC)<sup>1</sup>, and by cross-referencing this information with the TMEP Consultation Region GIS mapping tool developed by Natural Resources Canada (NRCan) during the EA<sup>2</sup>.

The thirty-three Indigenous groups that were consulted in relation to the Application for Authorization and the Addendum are:

- Tsleil-Waututh Nation
- Squamish Nation
- Musqueam Indian Band
- Stó:lō communities:
  - Aitchelitz Band
  - Chawathil First Nation
  - Cheam (Pilalt) First Nation
  - Katzie First Nation
  - Kwantlen First Nation
  - Kwaw-Kwaw-Apilt First Nation
  - Kwikwetlem First Nation
  - Leq'a:mel First Nation
  - Matsqui First Nation
  - Peters Band
  - Popkum First Nation
  - Scowiltz First Nation
  - Seabird Island Indian Band
  - Shxwha:y Village
  - Shxw'ow'hamel First Nation
  - Skawahlook First Nation
  - Skowkale First Nation
  - Skwah First Nation
  - Soowahlie Indian Band
  - Squiala First Nation
  - Sumas First Nation
  - Tzeachten First Nation
  - Union Bar Band
  - Yakweakwioose Band
- Hul'qumi'num communities:
  - Cowichan Tribes
  - Halalt First Nation
  - Lake Cowichan First Nation
  - Lyackson First Nation
  - Penelakut Tribe
  - Stz'uminus (Chemainus) First Nation

<sup>1</sup> The Aboriginal and Treaty Rights Information System (ATRIS) is available at: <http://sidait-atris.aadnc-aandc.gc.ca/atrismain/home-accueil.aspx>

<sup>2</sup> The TMEP Consultation Region Mapping Tool developed by NRCan during the EA for the Project is available at: <http://nrcan-rcan.maps.arcgis.com/apps/webappviewer/index.html?id=9c927f41c90f4f4c8c9fe0a9b7f172c4>.

DFO's preliminary depth of consultation assessment for each Indigenous group was based on its understanding of an individual Indigenous group's preliminary strength of claim and the seriousness of impacts to potential Aboriginal rights and title. DFO carried forward the Crown's preliminary strength of claim assessment from the EA process for the TMX Project, which was documented within Indigenous group-specific appendices of the *Joint Federal/Provincial Consultation and Accommodation Report for the Trans Mountain Expansion Project* (the CAR). DFO established a pre-consultation assessment of the seriousness of impact for each group based on the geographic extent of the marine local study area (LSA) defined as the area within 500 m of the proposed water lease expansion<sup>3</sup> and information from the CAR, filings on the NEB Registry, and information provided in the Application for Authorization.

Three Indigenous groups were identified as being owed a level of consultation from the moderate to deeper end of the *Haida* spectrum. These groups were:

- Tsleil-Waututh Nation (Deep)
- Squamish Nation (Moderate)
- Musqueam Indian Band (Moderate)

The remaining Indigenous groups that are part of the Stó:lō and Hul'qumi'num communities (see above) were identified as being owed a lower depth of consultation on the *Haida* spectrum.

Through written correspondence, DFO offered groups owed a deep or moderate preliminary depth of consultation the opportunity to comment on the Application for Authorization, the Addendum, and DFO's Draft Conditions of Authorization. DFO also offered to meet with these groups in-person to provide technical expertise to support their review of the Application and the Addendum, and responded to questions and information requests as they arose. DFO provided groups owed a low preliminary depth of consultation with written correspondence describing the scope of the works, undertakings or activities associated with the proposed Terminal expansion, and included maps depicting the location of works, fish habitat potentially impacted, and a description of the fish habitat offsetting measures proposed. Although these groups were not initially provided with a copy of the Application for Authorization or the Addendum, DFO offered to provide the Application for Authorization and the Addendum should individual groups request copies of these documents. Where comments, questions and/or information requests were received from Aboriginal groups initially assessed as being on the lower end of the *Haida* spectrum, DFO provided responses to address questions or concerns raised.

In practice, DFO did not conduct consultations strictly following its preliminary depth of consultation assessment; instead, DFO opted to engage in consultation at a depth commensurate to the level at which individual groups wanted to engage in. For example, although Kwantlen and Lyackson First Nation were initially assessed by DFO as being owed a low depth of consultation, as result of the level of

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<sup>3</sup> Application for Authorization, Figure 3.1

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engagement from these groups, DFO offered to meet with these groups in-person and travel to their communities or to other locations that would be convenient to explain in plain language the technical aspects of the proposed works, undertakings or activities, and the associated impacts on fish and fish habitat, along with the proposed mitigation and offsetting measures. DFO also provided these groups with copies of the Draft Conditions of Authorization for review and comment. Thus, DFO strived to meaningfully consult with individual Indigenous groups to the extent and depth that each group wished to engage in consultations with DFO.

DFO also expressly requested that Indigenous groups provide input on their asserted or established Aboriginal or Treaty rights if they were of the view DFO did not fully understand these.

### **Record of Consultation – Groups Owed a High to Moderate Depth of Consultation**

#### **Tsleil-Waututh Nation**

Tsleil-Waututh Nation (TWN) was identified by DFO as being owed a deep level of consultation on the *Haida* spectrum.

DFO first engaged with TWN on March 2, 2017, with a letter (sent via e-mail and as a hard-copy through the mail) that provided a summary of the works, undertakings or activities described in the Application for Authorization that the Proponent anticipates will result in serious harm to fish. A CD with a copy of Trans Mountain's Application for Authorization under Paragraph 35(2)(b) of the *Fisheries Act* was enclosed with the letter, as was a link where an electronic version of the Application was made available. In the letter, DFO sought comments on the Application for Authorization and Trans Mountain's proposed Offsetting Plan, and requested information on how the works, undertakings or activities proposed may affect TWN's asserted or established Aboriginal or Treaty rights. DFO noted that while the Crown does not have a capacity funding program to offer for costs related to consultation, DFO's technical experts would be available to travel to their community and assist with TWN's review. The letter also made note that DFO would like to meet with TWN to discuss any concerns or comments TWN might have in relation to the Application for Authorization.

Following this initial letter, DFO received a response from TWN dated March 30, 2017. Within this letter, TWN stated it is actively withholding consent to the TMX Project from proceeding in TWN territory, and that any authorizations that are issued in relation to the TMX Project will unjustifiably infringe on TWN's Aboriginal title, rights, and interests in the Burrard Inlet.

Following TWN's letter dated March 30, 2017, DFO sent a follow-up response dated May 2, 2017, re-stating DFO's objective to consult with TWN and requesting to meet in-person to discuss the Application for Authorization so that TWN may be well-informed and, in turn, advise DFO of any outstanding concerns that TWN may have specifically relating to the Application for Authorization so that these concerns may be addressed through conditions of a potential *Fisheries Act* authorization, or other federal instrument. DFO included a copy of the Draft Conditions of Authorization with this letter.

TWN responded to this letter on May 4, 2017, acknowledging DFO's request to meet and noting that the Vancouver Fraser Port Authority (VFPA) has also requested to meet with TWN to discuss the Terminal expansion. DFO then coordinated with VFPA and, on May 12, 2017, met in-person with TWN and VFPA to discuss the Application for Authorization at the TWN Band Office in North Vancouver. TWN stated within the meeting that it will not be considered by the TWN as consultation and that TWN is not willing to engage in discussion more detailed than answering a few general questions.

Following the May 12, 2017 meeting, DFO sent a follow up letter to TWN dated June 26, 2017, describing the additional proposed works, undertakings or activities described in the Addendum that were not included within the original Application for Authorization. This letter included a link to an electronic copy of the Application of Authorization and the Addendum. DFO also provided responses to the concerns that were raised by TWN during the May 12, 2017 meeting with TWN, DFO and VFPA, and

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attached the meeting minutes for TWN to review. DFO emphasised that it is hoping to continue consulting with TWN on the Application for Authorization, and would be pleased to meet and engage in more consultation regarding TWN's section 35 claims and TWN's views on any potential adverse impacts to TWN's rights or interests from the works, undertakings or activities proposed.

DFO sent an additional letter to TWN dated July 18, 2017, seeking TWN's views in regard to potential supplementary offsetting measures that may be incorporated within conditions of a potential *Fisheries Act* authorization for the proposed Terminal expansion. These potential supplementary offsetting measures are aimed to address TWN's conservation and restoration priorities in Maplewood Flats and in the Indian Arm, as identified in TWN's *Burrard Inlet Action Plan*. DFO requested TWN's views on potential supplementary offsetting measures in order to assist DFO's development of Draft Conditions of Authorization.

TWN responded to DFO's letter dated July 18, 2017 on July 19, 2017, noting that TWN will consider DFO's request and follow-up. TWN also requested DFO correct the record going forward to reflect TWN's historical harvest of rockfish in the Burrard Inlet. DFO committed to correcting the record.

On July 25, 2017, VFPA forwarded a letter it had received from TWN dated July 21, 2017. VFPA also included an excerpt of an additional letter VFPA had received from TWN, but had not been provided to DFO, as it contained relevant information for DFO consideration. The attached letter from TWN was a response from TWN to the Permit Application by the Proponent to VFPA for the proposed Terminal expansion. TWN outlined its continuing concerns regarding the impacts of the Terminal expansion on TWN's rights and interests, including: the impacts from cumulative effects in Burrard Inlet on TWN's restoration efforts, impacts from marine vessel traffic on TWN's ability to travel safely through the Burrard Inlet, threats to TWN's right to clean water, impacts from noise, view, and light disturbance from Terminal operations, threats to TWN's archaeological sites of importance, and threats of an oil spill. TWN asserted that the issuance of a permit by the VFPA, as well as any other decisions purporting to authorize the Terminal expansion, will unjustifiably infringe upon TWN's Aboriginal title, rights and interests.

The excerpt VFPA provided DFO of an additional letter from TWN was originally sent to Robin Sylvester, President and CEO of VFPA. Within the excerpt, TWN stated that it has designated 2,600 hectares of water surface within Burrard Inlet as sensitive marine fish and wildlife habitat, and mandates that these sensitive areas receive heightened protection and are the focus of future biological recovery activities. TWN has included the area around the Terminal within this designation, as it is a DFO Rockfish Conservation Area and a TWN Important Crab Area. TWN explained that if VFPA were to expand the Terminal's water lot lease, serious additional impacts would result to rockfish and Dungeness crab habitat and populations. Preserving these species is critical to TWN. Dungeness crab in particular is the only active, Indigenous fishery in the Central Harbour available to TWN. In order to support TWN harvesting activities in the area across from TWN's main community in Indian Reserve #3, TWN has stated to VFPA that TWN "would like to acquire the submerge land that Trans Mountain is proposing to use for the purpose of its proposed expansion of the Terminal with a view to further rehabilitate that area to provide habitat for rockfish and Dungeness crab populations..."

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On July 31, 2017, TWN followed-up with DFO regarding DFO's July 18, 2017 letter to notify DFO that TWN will require more time to provide a full response as the letter will be taken to Chief and Council for consideration. DFO responded, expressing its appreciation for TWN taking the time to consider DFO's letter seriously. DFO requested that TWN provide a response by August 16, 2017 if possible, but acknowledged that this may be difficult due to the challenging schedules and many priorities of Chief and Council.

On August 17, 2017, TWN responded to DFO's letter of July 18, 2017, stating that the TMX Project will unjustifiably infringe on TWN's asserted Aboriginal title, rights, and interests in Burrard Inlet, and that after reviewing DFO's draft supplementary offsetting measures, their conclusion remains the same that even with the additional offsetting, the TMX Project would unjustifiably infringe on TWN asserted title, rights, interests. TWN expressed appreciation for DFO's attempts to address TWNs priorities under the *Burrard Inlet Action Plan*, however, they were of the view that advancement of the Plan's priorities should not occur through conditions of a *Fisheries Act* authorization, but rather through a Canada-TWN reconciliation agreement under development between TWN and Indigenous and Northern Affairs Canada. TWN's letter restated TWN's request that DFO not issue any authorizations pertaining to the TMX Project without TWN's consent, asserting that this request is consistent with the *Principles Respecting the Government of Canada's Relationship with Indigenous Peoples*.

On August 23, 2017, DFO contacted TWN and asked whether a letter sent to TWN by VFPA could be shared with DFO, as DFO was made aware that VFPA had sent correspondence to TWN on August 22, 2017, that discussed the supplementary offsetting measures DFO had proposed in their July 18, 2017 letter to TWN. TWN agreed to share this letter with DFO, and provided it to DFO on August 23, 2017. Within the letter, VFPA states that their intention is to work with DFO to support TWN's goal of recovering shellfish habitat in Indian Arm. VFPA also noted that supplementary measures are currently being drafted within DFO's *Fisheries Act* authorization for the construction of the WMT expansion, and that the implementation of the proposed accommodation measures may be subject to change pending discussion with TWN. It should be noted that VFPA did not consult with DFO on the content of their August 22, 2017 letter to TWN, and DFO had not made a determination with respect to inclusion of potential supplementary offsetting measures within the Draft Conditions of Authorization, as it was in the process of considering TWN's letter of August 17, 2017.

On September 5, 2017, DFO responded to TWN's letter of August 17, 2017, advising TWN that in the consideration of TWN's request and in the spirit of reconciliation, DFO is not proceeding with the incorporation of supplementary offsetting measures within the Draft Conditions of Authorization for the proposed terminal expansion. The correspondence further noted that DFO would be forwarding TWN's August 17, 2017 letter to INAC for review and consideration, and that DFO is exploring other avenues whereby it may accommodate potential residual effects from construction of the proposed terminal expansion on TWN's traditional marine harvesting.

#### Views from Tsleil-Waututh Nation and Responses provided by DFO

From this correspondence and meeting, DFO understands TWN's key concerns regarding the proposed Terminal expansion to be as follows:

- TWN's governance rights are not being recognized or respected by the Crown, and any decisions authorizing the proposed Terminal expansion, or the TMX Project as a whole, would unjustifiably infringe upon TWN's Aboriginal title, rights and interests in the Eastern Burrard Inlet and therefore requires either TWN consent or justification by the Crown;
- The cultural sensitivity and the importance and sensitivity of the fisheries habitat in the area of and around the proposed works, undertakings or activities, which has been designated by TWN as sensitive marine fish and wildlife habitat due to being a DFO Rockfish Conservation Area and a TWN Important Carb Area;
- The loss of control and benefit of the water, land, air and resources to future TWN generations, especially in regards to a decrease in availability of wild, safe marine foods for TWN community members to harvest;
- The protection of Dungeness crab populations and the opportunity to harvest them in the Central Harbour – Dungeness crab is the only active, Indigenous fishery in the Central Harbour currently available to TWN, and it supports TWN's subsistence economy;
- A history of unsuccessful attempts to fully meet TWN's goals in regards to changing or stopping a project that impacts TWN's asserted or established Aboriginal or Treaty rights has resulted in TWN to view consultation participation as not being a meaningful way to achieve TWN interests;
- The risk of an oil spill and the cumulative effects of marine shipping to environmental, social, and cultural values in the Burrard Inlet, including the infringement of TWN's right to safe, unobstructed travel throughout Burrard Inlet;
- The threat that expanding the Terminal's dock facility poses to TWN's right to clean water, free from pollution, for drinking and for cultural, ceremonial, spiritual, subsistence, and economic purposes due to released polluted storm water (as shared with VFPN);
- Permanent disruptions from noise and light, and permanent visual quality impairment, resulting from operations of the Terminal (as shared with VFPN);
- Threats to sensitive sites and intact and disturbed archaeological remains and deposits in the vicinity of the Terminal (as shared with VFPN);
- Impacts of underwater noise to marine species along the TMX Project shipping route, especially for Southern Resident Killer Whales;
- Environmental degradation in areas surrounding the Terminal, specifically Indian Arm and Maplewood Flats, through ocean acidification and substrate embeddedness and its impacts on traditional shellfish harvesting; and
- Set-backs to, or the elimination of, progress TWN has made in restoring Burrard Inlet and increasing the availability of safe marine foods for harvest resulting from the expansion of the existing Terminal's water lot lease (as shared with VFPN). Potential impacts of the lease expansion to rockfish and Dungeness crab habitat and populations are of particular concern.

TWN has brought applications for judicial review of the NEB's report and the GiC's decision to approve the TMX Project, and is currently before the Federal Court of Appeal. TWN is actively withholding its consent to the proposed Terminal expansion, and to the TMX Project as a whole, proceeding in their traditional territory and has therefore requested that DFO refrain from issuing any authorizations or

other decisions that would enable any component of the TMX Project, including the Terminal expansion, to continue in TWN's traditional territory. If DFO does issue an authorization, or other authorizing decision, TWN has noted that they may take additional legal action.

While legal proceedings that TWN is involved in unfolds, DFO is continuing to process the proponent's Application for Authorization, and is seeking to consult with TWN on any potential adverse impacts that the Application for Authorization and the Addendum may have on any asserted or established Aboriginal or Treaty rights of TWN's community. This information would assist DFO to properly understand how such impacts may be avoided or mitigated in its decision-making in relation to the Application for Authorization.

In order to ensure the value of the fish habitat in the area is maintained, the Proponent has proposed to construct 9,011m<sup>2</sup> of intertidal and subtidal rock reefs in the vicinity of the Terminal within their Offsetting Plan<sup>4</sup>. DFO's Draft Conditions of Authorization require the Proponent to construct the reefs as they describe them. These rock reefs will be composed of a mix of three different reef types including an adult reef, an integrated reef and a nursery reef. DFO is of the view that rock-reefs have been demonstrated to be successful on other marine projects, and will likely increase productivity of marine fish habitat in Burrard Inlet<sup>5</sup>. The reefs will allow for a diverse community of algae, finfish (rockfish, lingcod, juvenile salmon) and invertebrates (Dungeness crab, barnacles, mussels, sea stars) to become established over time. Consistent with DFO's *Rockfish Conservation Strategy*, the rock-reef offsetting will help to protect and conserve rockfish populations and will provide habitat to help maintain the productivity of inshore rockfish species, including the copper and quillback rockfish.

DFO acknowledges that while TWN considers the fish habitat potentially impacted by the Terminal expansion to be important, which is primarily utilized by rockfish, TWN does not consider that particular habitat as being a strong priority from a habitat restoration perspective. After referring to TWN's Traditional Use Knowledge database and the archeological record, TWN has confirmed with DFO that while rockfish is a traditionally harvested species by TWN, rockfish is not harvested in as large a quantity as other species such as salmon and herring. Instead, habitat in the surrounding area (e.g., Maplewood Mudflats) is a greater restoration priority for TWN, as it provides important migration and rearing habitat for salmon, forage fish, and other fish species. TWN has also noted that Indian Arm is a vital area for TWN for practicing traditional shellfish harvesting, and that the effects of water quality and substrate embeddedness on shellfish productivity in this area is of concern. The opportunity to harvest Dungeness crabs in the Central Harbour is also critical to TWN, it being the only active, Indigenous fishery in that area available to TWN.

The offsetting measures proposed by the Proponent and included within the Draft Conditions of Authorization have been designed in a way that will increase benefits to Dungeness crab. The seaward extent of the rock reefs is adjacent to soft-sediment areas most likely to be used by Dungeness crabs

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<sup>4</sup> Westridge Marine Terminal Application for Authorization under Paragraph 35(2)(b) of the Fisheries Act - Pg. 8.7

<sup>5</sup> Written Evidence for Trans Mountain Expansion Project, DFO, Pg. 20

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s.21(1)(b)

(i.e., around depths of -13 to -18 CD based on sampling data provided by the Proponent<sup>6</sup>). The reefs are thus located at depths that minimize impacts to Dungeness crabs while increasing primary and secondary productivity, enhancing foraging and refuge habitat for Dungeness crabs.



It is DFO's understanding that a key priority of TWN is to restore Burrard Inlet and increase the availability of wild, safe marine foods for harvest by TWN community members. TWN's *Burrard Inlet Action Plan* outlines TWN's interests related to shellfish harvesting and conservation and restoration at Maplewood Flats in particular.

To address these interests and priorities, DFO is exploring opportunities for supplementary offsetting within the context of a potential *Fisheries Act* authorization, which would require the Proponent to implement supplementary offsetting (e.g., research studies, beach clean-ups, fish habitat restoration and/or enhancement, etc.) that would help address these interests. In particular, DFO is exploring opportunities to address Priority's 5 and 6 within TWN's *Burrard Inlet Action Plan*, which are as follows:

- Priority 5: Conserve Critical Nearshore Habitat Complexes – Pilot Project at Maplewood Flats; and
- Priority 6: Recover Shellfish Beds – Pilot Project in Indian Arm.

DFO has requested TWN's views on potential options for supplementary offsetting measures that would effectively address these priorities and would assist DFO in the development of its Draft Conditions of Authorization. While TWN expressed appreciation for DFO's attempts to address TWNs priorities under the *Burrard Inlet Action Plan*, they were of the view that advancement of the Plan's priorities should not occur through conditions of a *Fisheries Act* authorization, but rather through a Canada-TWN reconciliation agreement under development between TWN and Indigenous and Northern Affairs Canada. In their view, this latter approach would be more consistent with the *Principles Respecting the Government of Canada's Relationship with Indigenous Peoples* released by Justice Minister Jody Wilson-Raybould on July 19, 2017.

In keeping with TWN's request and in the spirit of reconciliation, DFO did not proceed with inclusion of supplementary offsetting measures within the Draft Conditions of Authorization. DFO is instead continuing to explore other avenues whereby it may address potential residual impacts to TWN's marine harvesting outside the scope of a potential *Fisheries Act* authorization.

In order to address the concerns TWN has raised to VFPN that are unrelated to fish or fish habitat, DFO is relying on mitigation and offsetting measures implemented by VFPN. There is a mutual reliance between DFO and VFPA in order to ensure all potential adverse impacts to Indigenous groups are addressed, both related and unrelated to fish and fish habitat.

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<sup>6</sup> Westridge Marine Terminal Application for Authorization under Paragraph 35(2)(b) of the Fisheries Act – Appendix A, Figure 5.4

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From the Crown's perspective, current and future discussions with TWN in relation to the Application for Authorization and Addendum are intended to inform DFO's specific understanding of the potential adverse effects of the potential issuance of an authorization on TWN's interests, and will be relied on to address and accommodate any such potential adverse effects. DFO has emphasized that it wishes to continue consulting with TWN on the Application for Authorization and the Addendum, and continues to welcome TWN's views and comments on the Application for Authorization, the Addendum, DFO's responses to TWN's previous comments, and the Draft Conditions of Authorization.

### **Musqueam Indian Band**

DFO identified Musqueam Indian Band (Musqueam) as being towards the middle end of the *Haida* spectrum of consultation.

Following receipt of the Proponent's Application, on March 2, 2017, DFO sent out a letter to Musqueam (sent via e-mail and as a hard-copy through the mail), providing a summary of the works, undertakings, or activities described in the Application for Authorization that the Proponent anticipates will result in serious harm to fish. A CD with a copy of the Proponent's Application for Authorization under Paragraph 35(2)(b) of the *Fisheries Act* was enclosed with the letter, as was a link where an electronic version of the Application was made available. In the letter, DFO sought comments on the Application for Authorization and the Proponent's proposed Offsetting Plan, and requested information on how the works, undertakings or activities proposed may affect Musqueam's asserted or established Aboriginal or Treaty rights. DFO noted that while the Crown does not have a capacity funding program to offer for costs related to consultation, DFO's technical experts would be available to travel to their community and assist with Musqueam's review. The letter also made note that DFO would like to meet with Musqueam to discuss any concerns or comments Musqueam might have in relation to the Application for Authorization.

Musqueam responded to DFO's initial consultation letter dated March 2, 2017, on March 31, 2017. Within their letter Mr. Jamie Sanchez, of behalf of Musqueam, emphasized that without capacity funding Musqueam is unable to provide a fulsome review of the Application for Authorization and therefore, the comments provided are preliminary in nature. Musqueam requested that DFO not issue any authorization until Musqueam is satisfied that there will be no negative effects on Musqueam's Aboriginal rights and interests resulting from the Terminal expansion. Musqueam's comments specifically raised concerns related to inadequate consultation by the Proponent during the development of the Offsetting Plan; concerns related to proposed construction methods for pile installation and maintaining the integrity of the turbidity curtain; potential impacts to Dungeness crab; and the use of comparison sites within Burrard Inlet to assess the efficacy of offsetting measures.

DFO provided a follow-up e-mail and letter to Musqueam on April 2, 2017, emphasizing that while DFO does not have any capacity funding to offer, DFO would like to meet in-person with Musqueam to discuss both the Application for Authorization and the specific concerns raised by Musqueam within their March 31, 2017 letter. To reduce impact on Musqueam resources and improve efficiency, DFO committed to coordinate consultation with the Vancouver Fraser Port Authority (VFPA), who is also

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consulting with Musqueam on an approval related to the proposed Terminal expansion. A copy of DFO's Draft Conditions of Authorization for the Terminal was included along with DFO's letter.

**s.20(1)(c)  
s.21(1)(b)**

Following DFO's response dated April 2, 2017, Musqueam sent a follow-up letter on May 24, 2017 from Mr. Sanchez. On behalf of Musqueam, Mr. Sanchez noted that Musqueam is in active litigation with the federal Crown. (The Musqueam are challenging the GIC Order authorizing the project. They allege the project unjustifiably infringes their court-proven Aboriginal right to fish for FSC purposes, and that the crown failed to fulfill its duty to consult. They allege the Crown did not fully consider potential impacts of the project, including the impacts of increased tanker traffic on their fisheries. The Musqueam have not sought judicial review of the NEB report recommending that TMX be authorized.) Musqueam also noted that the capacity funding provided to Musqueam to support their participation as an Intervenor during the EA process was insufficient for Musqueam to conduct an assessment of the impacts of the Terminal expansion. Musqueam accepted DFO's offer to meet to discuss DFO's Draft Conditions of Authorization and their concerns with the Application for Authorization. A copy of Musqueam's Separate Submission to the Ministers regarding the TMX Project was also included along with Musqueam's letter, which summarized the major concerns raised by Musqueam during the EA process, including the Crown's refusal to provide a justification analysis on infringement of Musqueam's proven Sparrow right to fish, Musqueam's disagreement with the Crown's assessment of Project-related impacts to Musqueam's Aboriginal rights and interests, and Musqueam's opposition to the proposed Indigenous Advisory and Monitoring Committee (IAMC) as a primary project-specific accommodation measure.

After some coordination with Musqueam and VFPA, a teleconference meeting was held on June 8, 2017 that was a half hour in length. Musqueam communicated they could only devote 30 minutes to the meeting as they have limited capacity and resources. During the meeting, Mr. Sanchez noted that Musqueam has limited resources and therefore has difficulty reviewing the authorization and permit application information shared by DFO and VFPA. Musqueam emphasized that they are in active litigation against the federal Crown in relation to the GiC decision allowing the TMX Project to proceed, and that no capacity funding has been provided by DFO, VFPA, or the Proponent to support Musqueam's review of the Terminal expansion. Mr. Sanchez stated that there is an infringement of Musqueam's Sparrow fishing rights, and no justification has been provided. Musqueam also noted that they would not be participating in the IAMC as they do not view it, or the Oceans Protection Plan (OPP), as accommodation measures. DFO understands however that Musqueam is participating in the OPP initiatives with Transport Canada.

VFPA advised Musqueam during the teleconference meeting that they have a small amount of capacity funding available,

Musqueam responded on June 15, 2017, via e-mail, requesting that DFO confirm that DFO would not be providing any capacity funding.

Musqueam also emphasized that no Crown agency should issue any permits related to

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the TMX Project until the active litigation Musqueam is involved in is settled. Musqueam stated that they will seek justification for infringement if any permits are issued by the Crown.

s.20(1)(c) On June 27, 2017, Tracey Sandgathe of DFO sent Musqueam an e-mail and attached letter providing s.21(1)(b) Musqueam with information on the Addendum to the Application that the Proponent submitted to DFO on June 20, 2017. In response to Musqueam's email dated June 15, 2017, DFO confirmed that DFO will not be providing any capacity funding, however DFO can provide technical expertise to assist with Musqueam's review and can meet to discuss the Application for Authorization at a time and place convenient for Musqueam. Within the attached letter, DFO provided an overview of the additional works proposed in the Addendum, and emphasized that DFO wishes to continue to engage in good faith consultation and welcomes Musqueam's comments on the Addendum, the Application for Authorization, or the Draft Conditions of Authorization. DFO also enclosed written responses to Musqueam's comments dated March 31, 2017 and welcomed Musqueam's comments on these responses as well. A link to an electronic copy of the Application for Authorization and the Addendum was included within the letter.

Musqueam followed-up to DFO's June 27, 2017 correspondence on July 21, 2017 with an e-mail and attached letter. Within the letter,

Musqueam also stated that the funding provided by VFPA is insufficient to support Musqueam's review of the VFPA permit, without the additional review of the Application for Authorization. Musqueam noted its appreciation for DFO's responses to its letter dated March 31, 2017, however Musqueam also noted that it does not share DFO's views that the proposed mitigation and offsetting measures will minimize additional impacts to fish, nor does Musqueam agree that the proposed methodology for conducting effectiveness monitoring of the offsetting measures is sufficient. Musqueam re-stated that if DFO were to proceed with the issuance of a *Fisheries Act* authorization, a justification for the infringement of Musqueam's Aboriginal right to fish, under *Sparrow*, will be required.

DFO acknowledged receipt of Musqueam's July 21, 2017 correspondence on July 21, 2017.

On July 25, 2017, VFPA forwarded a letter to DFO it had received from Musqueam dated July 21, 2017. Within this letter, Musqueam stated that VFPA's offer of \$5,000 in capacity funding is insufficient to facilitate Musqueam's review of the permit application. Musqueam noted that it provided preliminary comments to DFO regarding impacts of the Application to Musqueam's Aboriginal rights, and that further information is difficult to provide due to capacity constraints. Musqueam also re-stated that if VFPA were to proceed with the issuance of a permit, a justification for the infringement of Musqueam's Aboriginal right to fish, under *Sparrow*, will be required.

**Views from Musqueam Indian Band and Responses provided by DFO**

Since DFO first engaged with Musqueam on March 2, 2017, DFO has received two individual letters with specific comments and concerns regarding the proposed works, undertakings or activities outlined in the Application for Authorization, and has met with Musqueam once via teleconference to discuss the Application for Authorization.

From this correspondence and meeting, DFO understands Musqueam's key Terminal-specific concerns to be as follows:

- The Crown's assessment of Musqueam's Rights and Interests through the NEB report and the CAR are narrow in scope and rely on insufficient knowledge and understanding of cumulative effects;
- Capacity funding and resourcing support has been insufficient for Musqueam to be able to conduct a fulsome review of the Application for Authorization. Musqueam states that funding that was provided during the EA process is insufficient to also cover a Terminal-specific review, funding offered by VFPA is not enough to support either a VFPA permit review or a review of the Application for Authorization, and the Proponent has not provided any funding despite confirming the availability of funding for Musqueam to DFO in past correspondence;
- Musqueam has an established Aboriginal right to fish within their territory, as determined by the Supreme Court in *R v. Sparrow*, and the Crown is required to justify any infringement on that right that the TMX Project and/or the Terminal may cause;
- The proposed IAMC does not grant any decision-making power to Indigenous communities, only adding to the burden of review placed on Indigenous communities by the Crown, and therefore cannot be considered as accommodation;
- Consultation by the Proponent regarding the development of the Terminal's Offsetting Plan was inadequate, and Musqueam was not consulted at the deeper end of the *Haida* spectrum;
- Construction-specific concerns, including opposing the Proponent's proposal to conduct pile-driving works outside the least-risk timing window for Burrard Inlet, and concerns over the effect of construction on water turbidity during adverse weather conditions;
- The location of the marine LSA is within a Rockfish Conservation Area and DFO Important Area for Dungeness crab. Dungeness crab is an important fishery for Musqueam, and the proposed Terminal expansion may limit access to that fishery; and
- The use of Comparison Sites with the Burrard Inlet to evaluate the success of the proposed offsetting rock-reef complex causes the success to be based on sites that have undergone cumulative environmental impacts, resulting in inaccurate comparisons.

DFO agrees that Musqueam is to be consulted at the deeper end of the *Haida* spectrum and acknowledges that Musqueam has a proven Aboriginal right to fish, as established by the Supreme Court of Canada decision in *R v. Sparrow*. Musqueam is one of the three Indigenous Groups identified as being owed a deeper preliminary depth of consultation in relation to the Application for Authorization, and consultation with Musqueam has been scoped to reflect this. DFO is committed to meeting its duty to consult and to ensure that there is no unjustified infringement of Aboriginal rights. Therefore, it is DFO's

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goal is to ensure that Musqueam is adequately consulted such that any effect of the proposed works, undertakings or activities on Musqueam's asserted or established Aboriginal rights and title are understood and that any negative effects are avoided or mitigated, should the requested authorization be issued.

s.20(1)(c)  
s.21(1)(b)

DFO has taken specific steps to respond to and address Musqueam's key concerns. DFO has been coordinating consultation efforts with VFPA in order to minimize any project review burdens on Musqueam.

[REDACTED]

While DFO is unable to provide capacity funding, DFO is available to provide technical expertise to assist with Musqueam's review, and can meet to discuss the Application for Authorization or other Terminal-related concerns at a time and location that is convenient for Musqueam.

[REDACTED]

DFO's offer of technical expertise cannot relieve resourcing burdens as the appropriate people to assess impacts to Musqueam rights are Musqueam experts and knowledge-holders.

DFO has also incorporated Musqueam's Terminal construction-related concerns within the Draft Conditions of Authorization. In particular, Condition 2.2.9.3<sup>7</sup> requires the Proponent to adhere to and monitor for a more conservative underwater sound threshold when engaging in pile driving activities outside of the least-risk window to prevent injury to fish, and Condition 2.2.10<sup>8</sup> requires the Proponent to suspend all works, undertakings or activities that may affect the integrity of the turbidity curtain during adverse weather conditions.

The Proponent has proposed to construct 9,011 m<sup>2</sup> of intertidal and subtidal rock reefs in the vicinity of the Terminal within their Offsetting Plan<sup>9</sup>, and DFO's Draft Conditions of Authorization require the Proponent to construct the reefs as described in the Application for Authorization. DFO is of the view that rock-reefs have been demonstrated to be successful on other marine projects, and will likely increase productivity of marine fish habitat in Burrard Inlet<sup>10</sup>. The reefs will allow for a diverse community of algae, finfish (rockfish, lingcod, juvenile salmon) and invertebrates (Dungeness crab,

<sup>7</sup> Condition 2.2.9.3: "Outside of the least risk windows for Burrard Inlet, when greater fish presence and higher local abundance may be expected, a more conservative underwater sound threshold of 22.5 kPa (207 dB re: 1 µPa) will be adhered and monitored to prevent injury to fish. If sound levels exceed the threshold or fish kill is observed with mitigation measures in place, pile driving activities are to cease immediately and methods are to be reviewed and modified in consultation with DFO."

<sup>8</sup> Condition 2.2.10: "A turbidity curtain must be used to isolate the work area during the excavation of riprap in order to contain marine sediment suspended in the water column and limit the extent of sediment dispersion. During severe weather conditions (e.g., > 70 km/h winds, or fog), works, undertakings or activities that may affect the effectiveness of the turbidity curtain must be suspended."

<sup>9</sup> Westridge Marine Terminal Application for Authorization under Paragraph 35(2)(b) of the Fisheries Act - Pg. 8.7.

<sup>10</sup> Written Evidence for Trans Mountain Expansion Project, DFO, Pg. 20.

barnacles, mussels, sea stars) to become established over time. Consistent with DFO's *Rockfish Conservation Strategy*, the rock-reef offsetting will help to protect and conserve rockfish populations and provides habitat to help maintain the productivity of inshore rockfish species, including the copper and quillback rockfish.

To ensure the offsetting measures are effective and functioning as intended, DFO has included conditions within the Draft Conditions of Authorization (e.g., Conditions 4.1 - 4.7) related to implementation and monitoring of the offsetting measures, including implementation of contingency measures should monitoring indicate that the offsetting is not functioning as intended.

In regards to Musqueam's views that comparison sites for offsetting should be situated in more pristine areas, DFO is of the view that it would not be feasible for the Proponent to compare the productivity generated by the proposed offsetting reefs to reefs located in more pristine areas, as the proposed reefs are sited in the vicinity of the Terminal expansion. Comparison sites are better situated in the local area of the proposed offsetting measures so that a comparison can be made under similar physical and oceanographic conditions to assess the effectiveness of the proposed offsetting.

The design of the proposed rock reef offsetting is in line with DFO's *Fisheries Productivity Investment Policy: A Proponent's Guide to Offsetting* (the "Policy"), which defines offsetting measures as "measures that are undertaken to counterbalance unavoidable serious harm to fish resulting from a project, with the goal of maintaining or improving the productivity of the commercial, recreational or Aboriginal fishery." Furthermore, the location of the offsetting in the vicinity of the project impact is also consistent with the Policy, which notes that "when determining the location for offsetting, offsets that occur within the vicinity of the project or within the same watershed are preferable." The proposed offsetting is also larger in area than the area of the impact (approximately 9,000 m<sup>2</sup>, in comparison to the impacted area of approximately 6,500 m<sup>2</sup>), which will serve to counterbalance any potential losses in fisheries productivity associated with the terminal expansion.

Musqueam has responded to these measures, stating that while Musqueam appreciates DFO's responses, Musqueam does not share DFO's confidence that the proposed conditions will adequately minimize additional impacts to fish from construction, and Musqueam does not accept the proposed methodology for monitoring the success of the rock-reef offsetting.

As DFO proceeds with its Application review, DFO continues to welcome Musqueam's views and comments on the Application for Authorization, the Addendum, DFO's responses to Musqueam's previous comments, and the Draft Conditions of Authorization.

It could be argued there is a causal link between increased shipping and the requested authorization being issued to the Proponent. The increased shipping is expected to result in moderate impacts to the Musqueam's proven food, social and ceremonial (FSC) rights. As a result, DFO considered measures proposed during the EA (i.e., through the NEB Certificate Conditions and Proponent Commitments), and measures that the Department could undertake to address these impacts. A summary of the measures considered is provided in the document titled "*Trans Mountain Expansion Project – Potential Mitigation and/or Accommodation measures that may address impacts to asserted or established Aboriginal Rights*

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*from increases in Project-related Marine Shipping" (Annex A). Through exploration of the aforementioned measures, DFO came to the conclusion that inclusion of potential measures within conditions of a potential *Fisheries Act Authorization* for the proposed Terminal expansion would not be suitable, as project-related shipping is not a work, undertaking or activity that would be covered by the Authorization. Instead, DFO determined that other departments or agencies would be better placed to address these impacts – although DFO could explore fisheries management mechanisms (outside of the requested authorization) as possible means to address the issue.*

DFO discussed the potential for impact with both Transport Canada and the VFPA. On July 20, 2017, DFO discussed the matter with VFPA staff and were advised that the Port does not intend to address vessel traffic in its permit for the Terminal expansion. The VFPA sees the TMX Project as a whole as having been approved by the federal government and the issue of vessel traffic outside the context of their permit review process for the Terminal expansion. On July 24, 2017 Transport Canada, following a call with Tracey Sandgathe, sent DFO an email outlining Transport Canada's regulation of marine traffic and potential interference with fishing access outside the areas under the jurisdiction of the VFPA. Following internal discussions, and based on the information provided by the VFPA and Transport Canada, DFO will work with Transport Canada and the VFPA following the issuance of an authorization (if one is ultimately issued) to address anticipated impacts to the Musqueam's proven FSC rights arising from increased shipping before the increased shipping actually occurs.

As a member of the IAMC, DFO anticipates working with Transport Canada, and engaging with potentially affected Indigenous groups, including Musqueam First Nation, on exploration of the impacts from marine shipping activities, and potential measures to mitigate these impacts. DFO also understands that Musqueam Indian Band is engaging with Indigenous and Northern Affairs Canada (INAC)

Lastly, measures proposed in the Oceans Protection Plan (e.g., Real-time awareness of marine traffic in Canadian waters and Proactive Vessel Management) may further contribute to addressing impacts to Musqueam's fishing rights. This suite of initiatives is anticipated to reduce any adverse impacts to the Musqueam's fishing rights prior to the commencement of increased project-related shipping in late 2019.

### **Squamish First Nation**

Squamish First Nation (Squamish) was identified by DFO as being towards the middle end of the *Haida* spectrum of consultation.

DFO first engaged with Squamish on March 2, 2017, with a letter (sent via e-mail and as a hard-copy through the mail) that provided a summary of the works, undertakings or activities described in the Application for Authorization that the Proponent anticipates will result in serious harm to fish. A CD with a copy of Trans Mountain's Application for Authorization under Paragraph 35(2)(b) of the *Fisheries Act* was enclosed with the letter, as was a link where an electronic version of the Application was made available. In the letter, DFO sought comments on the Application for Authorization and Trans Mountain's proposed Offsetting Plan, and requested information on how the works, undertakings or

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activities proposed may affect Squamish's asserted or established Aboriginal or Treaty rights. DFO noted that while the Crown does not have a capacity funding program to offer for costs related to consultation, DFO's technical experts would be available to travel to their community and assist with Squamish's review. The letter also made note that DFO would like to meet with Squamish to discuss any concerns or comments Squamish might have in relation to the Application for Authorization.

Having not received a response from Squamish, DFO sent a follow-up letter dated April 3, 2017, via e-mail and as a hard copy through the mail, seeking to understand how the proposed works, undertakings or activities may affect any asserted or establish Aboriginal or Treaty rights Squamish may have. Again, DFO expressed that it would greatly appreciate the opportunity to meet with Squamish and discuss the Application to Authorization, and offered the support of DFO's technical experts to travel to Squamish's community and assist with their review process.

Having not yet received a response, an additional follow-up letter was sent to Squamish via e-mail on May 25, 2017, which re-emphasised DFO's request for either written comments or an in-person meeting to improve DFO's understanding of how the proposed works, undertakings, or activities associated with the Terminal expansion may affect any asserted or established Aboriginal or Treaty rights Squamish may have. DFO enclosed a copy of the Draft Conditions of Authorization with the letter, and offered to provide technical expertise to assist with Squamish's review of the Draft Conditions and/or the Application of Authorization.

On June 26, 2017, a third follow-up letter was sent to Squamish via e-mail. This letter was sent following the receipt of the Addendum by the Proponent, notifying Squamish of the additional proposed works, undertakings or activities detailed within the Addendum that were not included in the original Application for Authorization. A link to an electronic copy of the Addendum was included within the letter. DFO stated that it continues to seek to understand how the works, undertakings or activities proposed in the Application for Authorization and the Addendum may affect any asserted or established Aboriginal or Treaty rights Squamish may have, and continues to seek Squamish's views on the proposed avoidance and mitigation measures and the Offsetting Plan.

DFO has not yet received a response from Squamish. However it continues to welcome Squamish's views and comments on the Application for Authorization, the Addendum and the Draft Conditions of Authorization, and has committed to keeping Squamish informed as DFO's review of the Application progresses.

### **Record of Consultation – Groups Owed a Low Depth of Consultation**

#### **Halalt First Nation**

Halalt First Nation (Halalt) was identified by DFO as being owed a lower depth of consultation on the *Haida* spectrum. Halalt signed a mutual benefits agreement with the Proponent and filed a Letter of Support for the TMX Project with the NEB on August 5, 2015<sup>11</sup>.

#### **Views from Halalt First Nation and Responses provided by DFO**

DFO first engaged with Halalt on March 2, 2017, with a letter that provided a summary of the works, undertakings or activities described in the Application for Authorization that the Proponent anticipates will result in serious harm to fish. Within this letter, DFO noted that it is of the view that the proposed works, undertakings or activities, and the associated offsetting measures are unlikely to adversely impact Halalt's asserted or established Aboriginal or Treaty rights. DFO also offered to provide a copy of the Application of Authorization to Halalt, should they request it.

Following this initial letter, DFO has received a letter with specific comments and concerns from Halalt regarding the proposed works, undertakings or activities outlined in the Application for Authorization, dated April 6, 2017, and has received a second letter specifically commenting on the Draft Conditions of Authorization, dated July 7, 2017.

DFO has also since provided Halalt with a link to an electronic version of the Application for Authorization and the Addendum, and has shared the Draft Conditions of Authorization. DFO also met briefly with Halalt at the TMX IAMC Regional Meeting in Sooke, dated June 14, 2017, and discussed the proposed Offsetting plan, a discussion which prompted DFO to request more information from the Proponent about the proposed offsetting. The Proponent's response was shared with Halalt.

On August 3, 2017, DFO was copied on an e-mail from VFPA to Halalt. Attached to this e-mail was a letter from VFPA written in response to a letter Halalt had provided VFPA, regarding the proposed Terminal expansion. VFPA had copied DFO, in addition to copying Transport Canada and the Proponent, as some of the issues raised by Halalt to VFPA are associated with the regimes of federal authorities outside of VFPA, including DFO.

From this correspondence, DFO understands Halalt's key concerns regarding the proposed Terminal expansion and the Application of Authorization to be as follows:

- The lack of reflection within the Application of Authorization and the Draft Conditions of Authorization of the importance of the Fraser River and its salmon fisheries to B.C. First Nations for subsidence and cultural reasons, and as being essential to ensuring First Nations are able to exercise their Aboriginal rights;

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<sup>11</sup> Joint Federal/Provincial Consultation and Accommodation Report for the Trans Mountain Expansion Project, Nov 21, 2016 - Appendix D.2, pg.3

- The lack of detail provided within the Application for Authorization on potential contingency measures and the lengthy timelines allotted to the Proponent to develop and implement a contingency plan in the case of mitigation failure;
- Methodology and construction-related concerns, including the Proponent's proposal to conduct pile-driving works outside the least-risk timing window for Burrard Inlet and the infrequency of the proposed annual monitoring report schedule compared to Halalt's recommended quarterly schedule;
- The absence of a requirement for the Proponent to work with the Indigenous Advisory and Monitoring Committee (IAMC) on monitoring reports and adaptive management, and the insufficiently robust language around the IAMC in the Offset Plan;
- The Proponent's rationale that since the duration of works is temporary, the high likelihood of fish mortality due to in-water works will not result in a residual effect;
- The need for the use of ecosystem services as an indicator of habitat offsetting success, including expanding the species that are being monitored beyond only Commercial, Recreational, or Aboriginal fishery taxa, expanding the length of time monitored occurs over, expanding the area that is monitored to include a nearby wetland and tidal flat area associated with Heron Creek, and establishing a clear and scorecard-type monitoring system to evaluate the overall success of the offsetting habitat in recreating the habitat and ecosystem services lost from the Terminal expansion;
- Ensuring that the Conditions of Authorization are developed to allow for the evaluation of any future monitoring or offsetting activities to adjust to the *Fisheries Act* as it changes with the upcoming legislative review process;
- The impacts from Project-specific increases in tanker traffic resulting from the proposed Terminal expansion, and the risk of a spill within the marine shipping route (as shared with VFPA);
- The cumulative effects of increased industrialization for the land and waters around the Terminal (as shared with VFPA); and
- Concerns with the Proponent's Environmental Management Plan, as it has been developed to remain compliant with NEB-imposed conditions (as shared with VFPA).

DFO is of the view that the level of detail provided in the Application for Authorization<sup>12</sup> surrounding contingency measures is adequate, and that monitoring the effectiveness of the primary mitigation measures is more important than the development of more detailed contingency measures. DFO addresses this within the Draft Conditions of Authorization which include several provisions ensuring mitigation measures are thoroughly monitored and reported on<sup>13</sup>. Halalt has expressed appreciation for DFO including conditions requiring monitoring and reporting, however Halalt also maintains its concerns over the ambiguity of contingency measures in the Draft Conditions of Authorization.

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<sup>12</sup> Westridge Marine Terminal Application for Authorization under Paragraph 35(2)(b) of the Fisheries Act – Section 6.3

<sup>13</sup> DFO Draft Conditions of Authorization, Condition 3

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DFO is also of the view that, although minor death of fish would be unavoidable during construction works, species likely to be impacted would be benthic fish, invertebrates and sessile slow moving fish species, which are abundant in the area and likely to disperse once works commence. With effective implementation of mitigation measures proposed by the Proponent (e.g., installation of turbidity curtains, working within the least-risk timing window, implementation of targeted fish salvages), a localized effect to fish populations is unlikely to occur. Halalt has since acknowledged that a certain level of fish mortality is unavoidable in relation to the proposed works, undertakings or activities; however Halalt notes that the ongoing impacts to fish and ecosystems after construction are of greater concern. As such, Halalt views increased habitat effectiveness monitoring as crucial for monitoring long term effects on fish and fish habitat resulting from the proposed Terminal expansion.

The Draft Conditions of Authorization also addresses Halalt's methodology and construction-related concerns. Specifically, Condition 2.2.9.3<sup>14</sup> requires the Proponent to adhere to and monitor for a more conservative underwater sound threshold when engaging in pile driving activities outside of the least-risk window to prevent injury to fish. DFO is confident that effective implementation of these mitigation measures will limit any potential residual effects to fish and fish habitat. Halalt's concerns regarding the monitoring report schedule are shared by DFO, and Conditions 3.2<sup>15</sup> and 3.3<sup>16</sup> of the Draft Conditions of Authorization require the Proponent to provide monthly monitoring reports, in addition to a post-construction monitoring report within 90-days of completion of the works, undertakings or activities. Halalt has since followed-up with DFO regarding this concern, satisfied with DFO's increase in report frequency.

In response to Halalt's concerns regarding the participation of the IAMC, DFO has included Condition 6 within the Draft Conditions of Authorization requiring monitoring reports to be provided to the IAMC. The Draft Conditions of Authorization also provide the opportunity for DFO, the IAMC and the Proponent to meet and discuss potential concerns the IAMC may have in relation to the content of the monitoring reports,<sup>17</sup> and for all information regarding remedial actions in the instance of potential non-

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<sup>14</sup> Condition 2.2.9.3: "Outside of the least risk windows (August 16 – February 28) for Burrard Inlet, when greater fish presence and higher local abundance may be expected, a more conservative underwater sound threshold of 22.5 kPa (207 dB re: 1 µPa) will be adhered and monitored to prevent injury to fish. If sound levels exceed the threshold or fish kill is observed with mitigation measures in place, pile activities are to cease immediately and methods are to be reviewed and modified in consultation with DFO."

<sup>15</sup> Condition 3.2: "The Proponent shall monitor the avoidance and mitigation measures referred to in Condition 2 of this Authorization and submit monthly construction monitoring reports to DFO for the duration of the works, undertakings or activities. The construction monitoring reports will indicate whether the measures and standards to avoid and mitigate impacts to fish and fish habitat were conducted according to the conditions of this Authorization ..."

<sup>16</sup> Condition 3.3: "The Proponent shall provide a post-construction monitoring report to DFO within 90 days of completion of the works, undertakings and activities and indicate whether the works, undertakings and activities were conducted according to the conditions of this Authorization by providing 'as-built' drawings, dated photographs, and a summary of the completed works, undertakings or activities (including any issues that arose pertaining to fish and fish habitat and how these issues were addressed)."

<sup>17</sup> Condition 6.2: "If the IAMC communicates concerns to DFO or to the Proponent related to the content of the monitoring reports (e.g., monitoring criteria, measures of success, etc.), the Proponent shall, at the request of DFO and, in a timely manner, meet with DFO and the IAMC to discuss the concerns."

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compliance to be shared with DFO and the IAMC in a timely manner.<sup>18</sup> Halalt has since expressed appreciation towards DFO's inclusion of Condition 6.

When measuring the effectiveness of offsetting measures DFO has often used fish habitat as a proxy, as using fisheries productivity itself as a measuring tool is made difficult by a multitude of confounding factors in the environment. The sub-tidal rock reefs proposed by the Proponent will replace the fish habitat that will be impacted by a similar quantity and quality of habitat, providing valuable habitat to finfish and invertebrate species in the vicinity of the Terminal. This is consistent with DFO's *Fisheries Productivity Investment Policy: A Proponent's Guide to Offsetting* which notes that offsetting measures are intended to "support and enhance the sustainability and ongoing productivity of fish that are part of or support a commercial, recreational or Aboriginal fishery". Halalt has since maintained its request to see more robust monitoring of offsetting measures by the Proponent, and has provided potential indicators that could be used to monitor the success of the offsetting measures as they relate to ecosystem services improvement.

After reviewing Halalt's letter dated July 7, 2017, which puts forward ideas and measures specifically concerning the Draft Conditions of Authorization, DFO determined that consideration and input from the Proponent is required in order to more fully discuss and consider the ideas Halalt has raised. DFO requested permission from Halalt to share its July 7, 2017 letter, which Halalt granted. Halalt's letter has since been shared with the Proponent.

The Proponent developed a response addressing the comments raised by Halalt on the Draft Conditions of Authorization, which was shared with DFO on July 31, 2017. Within their response, the Proponent noted its support for a few of Halalt's ideas and measures, including Halalt's request that the high importance of salmon to Indigenous communities be included in the authorization. For the ideas that the Proponent did not support, rationales were provided. While Halalt requested that all work is restricted to being completed within the least risk window, the Proponent noted its commitment to follow the Conditions of the Draft Conditions of Authorization which require the Proponent to adhere to a stricter underwater noise threshold when working outside the least-risk window, in addition to following a spatial commitment, to avoid potentially disrupting herring spawning. Halalt also requested that the abundance and diversity of marine birds be used as an indicator of fish productivity when measuring the effectiveness of the proposed offsetting. The Proponent responded to this request, stating that the area of habitat offsetting proposed is small relative to that of Burrard Inlet, and therefore is unlikely to have a significant effect on the local abundance of marine birds given the large ranges of these species. The Proponent also stated that it believes the current monitoring schedule is appropriate for effectiveness monitoring, that extending the area monitored to nearby tidal flats would not be appropriate, and that the existing monitoring approach is better suited to measuring the

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<sup>18</sup> Condition 6.3: "If monitoring activities and/or reports indicate non-compliance with any conditions of this Authorization and/or the provisions of the Fisheries Act, the Proponent must identify the reasons for non-compliance, remedial actions or measures taken or to be taken, a timeline for their implementation and the effectiveness of any implemented remedial measures. This information shall be provided in a report to DFO and the IAMC concurrently, and in a timely manner."

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productivity of commercial, recreational or Aboriginal fisheries than Halalt's suggested scorecard-type monitoring system.

To respond to the comments Halalt raised in its July 7, 2017 letter, on August 21, 2017, DFO developed a table that included both the Proponent's and DFO's responses to each of Halalt's comments, and provided this to Halalt First Nation. To address some of Halalt's comments and concerns regarding effectiveness monitoring of the proposed offsetting measures, DFO made changes to the Draft Conditions of Authorizations. In determining the scope and extent of the associated changes to the Conditions of Authorization, DFO weighed the technical and biological merit of measures Halalt proposed, the potential costs and burdens to the Proponent, and the value and benefits likely to be accrued through implementation of Halalt's proposed measures. Rationales were provided for each of Halalt's comments, where DFO did or did not address Halalt's comments within the Draft Conditions of Authorization. In Draft Condition 4.3<sup>19</sup>, DFO attempts to incorporate Halalt's views that the species monitored should be expanded by requiring the Proponent to identify indicator species representative of benthic invertebrate, algal, and finfish communities to allow for comparisons with reference sites. DFO is also requiring within Draft Condition 5.2.2.3<sup>20</sup> that observations of marine bird and marine mammals be documented when monitoring surveys are conducted of the reefs. To address Halalt's concern over the length of time required for effectiveness monitoring, DFO is requiring within Draft Condition 5.2.2<sup>21</sup> that the Proponent conduct Habitat Effectiveness Monitoring on a seasonal basis during summer and winter months, and for a duration of 10 years. DFO agrees with the Proponent that the proposed WMT expansion is unlikely to affect the tidal flat associated with the Heron Creek watershed, and also agrees that a scorecard approach is not necessary to allow for clarity within the required effectiveness monitoring assessments, and therefore did not include any associated conditions for these concerns.

On August 31, 2017, Halalt responded to DFO's August 21, 2017 correspondence, and advised DFO that Halalt First Nation had not had the opportunity to review DFO's response and the updated Draft Conditions of Authorization, and asked if there are timelines that they should be aware of. DFO followed-up with Halalt on September 1, 2017, explaining that DFO is in the advanced stage of processing the Application for Authorization and is finalizing the Draft Conditions of Authorization. DFO noted that it anticipated closing consultations in relation to the potential issuance of a *Fisheries Act*

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<sup>19</sup> Condition 4.3: "To assess the effectiveness of offsetting measures, the Proponent shall identify to DFO's satisfaction, reference sites in Burrard Inlet with similar substrate, grade, depth, and algal species, as the proposed rock reef complexes. Reference sites will be used to establish productivity targets (accounting for seasonal and inter-annual variation) and will include metrics such as species composition, species richness, relative abundance and percent cover as appropriate to evaluate whether offsetting measures are functioning as intended. Indicator species will be identified representative of benthic invertebrate, algal and finfish communities to allow for comparisons with reference sites. The criteria for assessing the effectiveness of offsetting will be developed no later than March 1, 2018, and the appropriateness of the selected reference sites and criteria for assessing effectiveness of offsetting must be agreed to in consultation with DFO."

<sup>20</sup> Condition 5.2.2: "5.2.2 Monitoring activities conducted as part of the Habitat Effectiveness Monitoring Program (described in Section 8.3.4.2 of the Application) must occur seasonally during the summer and winter months to document seasonal changes in the effectiveness and functioning of the offsetting, and an effectiveness monitoring report will be submitted 1, 2, 4, 6, 8, and 10 years following the completion of construction of the offsetting measures. Each report must include:

'Condition 5.2.2.3: Observations during surveys of the presence of marine birds and marine mammals within the vicinity of the offsetting"

<sup>21</sup> See footnote 21.

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authorization for the proposed terminal expansion early on during the week of September 4, 2017, and acknowledged that this timeline may not provide Halalt enough time to complete a review of DFO's letter of August 21, 2017 (including DFO's responses to Halalt's comments). On September 3, 2017, Halalt First Nation responded, advising they were happy that some of their comments were incorporated in the Draft Conditions of Authorization and disappointed that other comments pertaining to ecosystem services and a scorecard-type approach to monitoring were not incorporated. Their correspondence also noted that they will aim to submit a formal response by September 11 or 12, 2017, and looked forward to continued engagement through the IAMC.

In order to address the concerns Halalt has raised to VFPN that are unrelated to fish or fish habitat, DFO is relying on mitigation and offsetting measures implemented by VFPN applicable to both construction and operation of the Terminal/Terminal expansion. There is a mutual reliance between DFO and VFPA in order to ensure all potential adverse impacts to Indigenous groups are addressed, both related and unrelated to fish and fish habitat.

DFO continues to be of the view that the proposed works, undertakings or activities, and the associated offsetting measures, are unlikely to adversely impact any asserted or established Aboriginal or Treaty rights of Halalt First Nation, however any additional information that Halalt should provide on the Application for Authorization, the Addendum, or the Draft Conditions for Authorization is welcomed.

### **Katzie First Nation**

Katzie First Nation (Katzie) was identified by DFO as being owed a lower depth of consultation on the *Haida* spectrum.

#### Views from Katzie First Nation and Responses provided by DFO

DFO first engaged with Katzie on March 2, 2017, with a letter that provided a summary of the works, undertakings or activities described in the Application for Authorization that the Proponent anticipates will result in serious harm to fish. Within this letter, DFO noted that it is of the view that the proposed works, undertakings or activities, and the associated offsetting measures are unlikely to adversely impact Katzie's asserted or established Aboriginal or Treaty rights. DFO also offered to provide a copy of the Application of Authorization to Katzie, should they request it.

Following this initial letter, Katzie sent an e-mail dated March 13, 2017 requesting a copy of the Application for Authorization. DFO responded that same day with a link to an electronic copy of the Application for Authorization.

Since providing the Application for Authorization, DFO has received a letter from Katzie with comments on the Application for Authorization dated March 21, 2017. Katzie sent this letter a second time on April 4, 2017. From this correspondence, DFO understands Katzie's key concerns regarding the proposed Terminal expansion and the Application of Authorization to be as follows:

- The impact on the position Katzie may take in any litigation or negotiations which may result from any *Water Act* approval;

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- Impacts of any earthworks that may be required within Katzie's traditional territory on traditional or special sites upon a potential *Water Act* approval;
- Requiring any *Water Act* approval to maintain the protection of fisheries values as identified in the Application for Authorization and approved by DFO; and
- Ensuring only native plants and grasses are used for any riparian replanting requirements and slope stabilization works.

DFO has provided Katzie with two additional letters since their correspondence dated March 21, 2017, April 4, 2017. The first was a specific response to Katzie's comments, dated June 8, 2017, and the second, dated June 27, 2017, was sent shortly after DFO received the Proponent's Addendum and detailed the additional proposed works, undertakings or activities described in the Addendum that were not included in the Application for Authorization. DFO has also since provided Katzie with a copy of the Draft Conditions of Authorization.

Three of Katzie's concerns pertain to the *Water Sustainability Act* (previously known as the *Water Act*), which is administered by the Province of British Columbia. DFO therefore recommended that Katzie contact the provincial Ministry of Forests, Lands and Natural Resources Operations (FLNRO), and provided Katzie with the contact information of the staff member at FLNRO who is working on this file.

To address Katzie's concern over the protection of fisheries values, DFO is requiring the Proponent to implement several mitigation measures (e.g., working during least-risk windows, implementing erosion and sediment control measures, conducting fish salvages and relocations, etc.) and construct the proposed sub-tidal and intertidal rock reefs as fish habitat offsetting within its Draft Conditions of Authorization. These requirements will minimize impacts from the proposed Terminal expansion to fish and fish habitat and offset any residual impacts to fisheries productivity by providing valuable finfish and invertebrate habitat within the vicinity of the Terminal. Condition 2.2.4 of DFO's Draft Conditions of Authorization directly speaks to Katzie's concern over using native species during replanting works, as it requires disturbed riparian areas to be replanted with native non-invasive species of vegetation<sup>22</sup>.

DFO continues to be of the view that the proposed works, undertakings or activities, and the associated offsetting measures, are unlikely to adversely impact any asserted or established Aboriginal or Treaty rights of Katzie's community, however any additional information that Katzie should provide on the Application for Authorization, the Addendum, or the Draft Conditions for Authorization is welcomed.

#### **Kwantlen First Nation**

Kwantlen First Nation (Kwantlen) was identified by DFO as being owed a lower depth of consultation on the *Haida* spectrum.

#### Views from Kwantlen First Nation and Responses provided by DFO

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<sup>22</sup> Condition 2.2.4: "Disturbed riparian areas shall be replanted as appropriate, with native non-invasive species of vegetation."

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DFO first engaged with Kwantlen on March 2, 2017, with a letter that provided a summary of the works, undertakings or activities described in the Application for Authorization that the Proponent anticipates will result in serious harm to fish. Within this letter, DFO noted that it is of the view that the proposed works, undertakings or activities, and the associated offsetting measures are unlikely to adversely impact Kwantlen's asserted or established Aboriginal or Treaty rights. DFO also offered to provide a copy of the Application of Authorization to Kwantlen, should they request it.

Having not received a response from Kwantlen, DFO sent a follow-up letter dated April 3, 2017, seeking to understand how the proposed works, undertakings or activities may affect any asserted or established Aboriginal or Treaty rights Kwantlen may have. Again, DFO noted that it is of the view that any adverse impacts on these rights are unlikely.

On April 24, 2017, DFO received an e-mail and attached letter from Kwantlen in response to its March 2, 2017 and April 3, 2017 correspondence. From this correspondence, DFO understands Kwantlen's key concerns regarding the proposed Terminal expansion and the Application of Authorization to be as follows:

- The cumulative impacts of industry to the health and wellbeing of ocean and river ecosystems, of which Kwantlen has relied on for subsistence for time immemorial;
- A lack of meaningful consultation, which threatens Aboriginal rights and title; and
- Kwantlen's understanding that DFO has claimed the Terminal expansion will not result in serious harm to fish or marine mammals.

DFO has sent Kwantlen two additional letters since their response dated April 24, 2017. The first responded specifically to the comments and concerns raised in Kwantlen's letter, and the second was sent shortly after DFO received the Proponent's Addendum and detailed the additional proposed works, undertakings or activities described in the Addendum that were not included in the Application for Authorization. DFO has also since provided Kwantlen with a link to an electronic version of both the Application for Authorization and the Addendum, and a copy of the Draft Conditions of Authorization.

DFO does anticipate serious harm resulting from the proposed Terminal expansion, and has identified that approximately 6,500m<sup>2</sup> of sub-tidal and intertidal fish habitat is likely to be affected. In order to offset this serious harm, the Proponent is proposing to construct 9,011m<sup>2</sup> of intertidal and subtidal rock reefs in the vicinity of the Terminal within their Offsetting Plan<sup>23</sup>. DFO's Draft Conditions of Authorization require the Proponent to construct the reefs as they describe them. The proposed reefs would provide valuable habitat for finfish and invertebrate species, and is consistent with DFO's *Fisheries Productivity Investment Policy: A Proponent's Guide to Offsetting* which notes that offsetting measures are intended to "support and enhance the sustainability and ongoing productivity of fish that are part of or support a commercial, recreational or Aboriginal fishery". Therefore, DFO is contemplating the issuance of a potential *Fisheries Act* authorization for the expansion of the Terminal, and is consulting with Kwantlen in relation to this potential issuance.

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<sup>23</sup> Westridge Marine Terminal Application for Authorization under Paragraph 35(2)(b) of the Fisheries Act - Pg. 8.7

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Following its review of the CAR, which was shared with Kwantlen during the EA review process for the TMX Project, DFO does not anticipate the Terminal expansion to result in impacts to any asserted or established Aboriginal or Treaty rights that Kwantlen may have. DFO is of the understanding that Kwantlen's traditional territory does not overlap with the proposed marine LSA.

However, in order to ensure a full understanding of any concerns Kwantlen may have pertaining to the carrying on of the proposed works, undertakings or activities, and to explore opportunities to address those concerns through a potential Fisheries Act authorization or other federal instrument, DFO offered to provide technical expertise to assist Kwantlen in their review process. DFO also expressed a willingness to meet with Kwantlen to discuss the Application for Authorization.

DFO continues to welcome the Kwantlen's views on the Application for Authorization, the Addendum, or the Draft Conditions for Authorization as it continues to process the Application.

### **Kwikwetlem First Nation**

Kwikwetlem First Nation (Kwikwetlem) was identified by DFO as being owed a lower depth of consultation on the *Haida* spectrum.

#### Views from Kwikwetlem First Nation and Responses provided by DFO

DFO first engaged with Kwikwetlem on March 2, 2017, with a letter that provided a summary of the works, undertakings or activities described in the Application for Authorization that the Proponent anticipates will result in serious harm to fish. Within this letter, DFO noted that it is of the view that the proposed works, undertakings or activities, and the associated offsetting measures are unlikely to adversely impact Kwikwetlem's asserted or established Aboriginal or Treaty rights. DFO also offered to provide a copy of the Application of Authorization to Kwikwetlem, should they request it.

Having not received a response from Kwikwetlem, DFO sent a follow-up letter dated April 3, 2017, seeking to understand how the proposed works, undertakings or activities may affect any asserted or establish Aboriginal or Treaty rights Kwikwetlem may have. Again, DFO noted that it is of the view that any adverse impacts on these rights are unlikely.

On June 23, 2017, DFO received an e-mail and attached letter from Kwikwetlem in response to its March 2, 2017 and April 3, 2017 correspondence. From this correspondence, DFO understands Kwikwetlem's key concerns regarding the proposed Terminal expansion and the Application of Authorization to be as follows:

- The importance of the Burrard Inlet as marine rearing habitat for juvenile salmon, which is currently threatened by increasing development, and the uncertainty over whether the proposed offsetting will adequately provide the benefits the existing habitat already provides;
- The difference in offsetting requirements that may result from the current regulatory framework of the *Fisheries Act* in comparison to the pre-2012 regulatory framework, due to changes to the habitat protection provisions; and

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- The need for an independent Indigenous monitoring program to be included within a *Fisheries Act* authorization in order to oversee activities and potential impacts to Indigenous interests (including those beyond what is readily monitored under a *Fisheries Act* authorization).

Since receiving this correspondence, DFO has sent a response dated June 28, 2017, in order to specifically address the concerns that Kwikwetlem raised and to detail the additional proposed works, undertakings or activities described in the Addendum that were not included in the Application for Authorization. DFO also provided Kwikwetlem with a link to an electronic version of the Application for Authorization, the Addendum, and the Draft Conditions of Authorization.

The Proponent is proposing to construct rock reef complexes to offset the residual impacts resulting from the Terminal expansion. These rock reefs will overlap the intertidal and subtidal zones, and will include three types of reef; an adult reef, an integrated reef and a nursery reef. DFO anticipates these offsetting measures will provide diverse and complex habitat characteristics which will support adult and juvenile rockfish, Pacific salmon, Pacific herring, lingcod, and Dungeness crabs, among other species. While the existing substrates serve as valuable habitat for finfish and invertebrates, the proposed rock reef complexes will provide for greater structural complexity by increasing the availability and diversity of interstitial spaces within the vertical profile of the water column, providing important foraging and refuge habitat for marine fish and invertebrates. DFO anticipates the reef complexes located in the intertidal areas will provide valuable rearing habitat for migrating juvenile salmon.

To ensure the offsetting measures are effective and functioning as intended, DFO has included conditions with its Draft Conditions of Authorization, specifically Conditions 4.1 – 4.7, which include requiring the offsetting to be implemented as described within the Application of Authorization, and includes specific monitoring requirements and, should monitoring indicate offsetting measures are not functioning, specific contingency measure requirements.

DFO is of the view that a hypothetical comparison between potential offsetting requirements under the pre-2012 legislative framework and the current legislative framework of the *Fisheries Act*, as requested by Kwikwetlem, is unnecessary to provide a better understanding as to whether fish habitat is adequately protected under a potential authorization. Similar to the previous *Policy for the Management of Fish Habitat*, which strived for no-net-loss in the productive capacity of fish habitats, the current *Fisheries Productivity Investment Policy: A Proponent's Guide to Offsetting*, strives to counterbalance serious harm to fish and maintain the sustainability and ongoing productivity of fisheries. Therefore, DFO's conclusion that the proposed rock reefs will adequately counterbalance potential losses in fisheries productivity from the Terminal expansion would likely have resulted under the pre-2012 framework just as it has under the current framework.

In response to Kwikwetlem's request for an independent Indigenous monitoring program, DFO is currently exploring opportunities for meaningful involvement of Indigenous groups in monitoring of construction activities associated with the proposed Terminal expansion. In particular, DFO has been participating in the establishment process of the IAMC, which will oversee all phases of the TMX Project. The IAMC was formally established in July, 2017, and DFO continues to be actively involved in the

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IAMC's work (and is itself a committee member). DFO will engage with the IAMC in developing potential opportunities for involvement of Indigenous groups in monitoring activities associated with the Terminal expansion, and has committed to keeping Kwikwetlem informed of opportunities as they arise - and this will be accomplished through the IAMC.

DFO continues to be of the view that the proposed works, undertakings or activities, and the associated offsetting measures, are unlikely to adversely impact any asserted or established Aboriginal or Treaty rights of Kwikwetlem's community, however any additional information that Kwikwetlem should provide on the Application for Authorization, the Addendum, or the Draft Conditions for Authorization is welcomed.

### **Lyackson First Nation**

Lyackson First Nation (Lyackson) was identified by DFO as being owed a lower depth of consultation on the *Haida* spectrum.

#### Views from Lyackson First Nation and Responses provided by DFO

DFO first engaged with Lyackson on March 2, 2017, with a letter that provided a summary of the works, undertakings or activities described in the Application for Authorization that the Proponent anticipates will result in serious harm to fish. Within this letter, DFO noted that it is of the view that the proposed works, undertakings or activities, and the associated offsetting measures are unlikely to adversely impact Lyackson's asserted or established Aboriginal or Treaty rights. DFO also offered to provide a copy of the Application of Authorization to Lyackson, should they request it.

Following this initial letter DFO has since engaged in several exchanges of e-mail correspondence with Lyackson, in addition to providing the Application for Authorization, the Addendum, the Draft Conditions of Authorization, and three follow-up letters, one of which summarized the correspondence that has occurred between DFO and Lyackson to date. DFO has also extended an invitation to meet with Lyackson to discuss the Application for Authorization, with the goal of obtaining a better understanding of the potential impacts on Lyackson's asserted or established Aboriginal or Treaty rights.

From this correspondence, DFO understands Lyackson's key concerns regarding the proposed Terminal expansion and the Application of Authorization to be as follows:

- A lack of capacity funding to facilitate Lyackson's review of the Application for Authorization, including conducting desktop reviews, gathering traditional land use information, conducting third party independent assessment of scientific studies provided in the Application for Authorization, as well as possible field site visits with staff, Elders, and third-party independent scientists, resulting in a lack of meaningful consultation; and
- Having not had the opportunity to review the Application for Authorization or the Addendum to the Application, Lyackson is extremely concerned about impacts associated with the proposed terminal expansion, and has outstanding concerns with the TMX Project as a whole, that it views as yet to be mitigated or addressed.

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Lyackson has expressed their opposition to any work associated with the TMX Project until its outstanding concerns have been adequately mitigated and addressed at a level that satisfies Lyackson's standard.

DFO acknowledges that Lyackson may have challenges conducting a review of the Application for Authorization due to limits in resources. While DFO does not have capacity funding to offer Lyackson, or any other Indigenous group DFO is consulting with on the Application for Authorization, DFO has offered on several occasions to meet with Lyackson in-person at a place and time that it convenient for Lyackson and provide technical expertise to assist in Lyackson's review. DFO members are able to explain in plain language the technical aspects of the proposed works, undertakings or activities, the associated impacts on fish and fish habitat, and the proposed mitigation and offsetting measures.

DFO has also offered to contact the Proponent and inquire as to whether it would be able to provide capacity funding for Lyackson. Lyackson did not respond to this offer from DFO.

Lyackson acted as an intervenor during the EA process for the TMX Project, and submitted oral traditional evidence, written evidence, final oral summary and written arguments, in addition to responding to information requests from the Crown elaborating its concerns. During this process, Lyackson was provided with capacity funding from the Crown totalling \$53,920 to support its review and participation in the EA process. DFO is of the view that the scale and scope of the works, undertakings or activities associated with the Terminal expansion has not substantially changed since the EA, and therefore the information provided by Lyackson during the EA process is likely relevant and pertinent to DFO's *Fisheries Act* review.

DFO is seeking to understand and discuss the specific and outstanding concerns Lyackson has regarding the proposed Terminal expansion and any avoidance or mitigation measures that may be implemented to address these concerns within conditions of a potential *Fisheries Act* authorization. It is DFO's objective to ensure that Lyackson is adequately consulted to make sure the effects of any potential residual impacts on Lyackson's rights and interests are avoided or minimized to the extent possible.

Lyackson has responded to this correspondence, stating that it objects to the Application for Authorization on the grounds that there has been no meaningful consultation due to a lack of adequate capacity funding. Lyackson has also stated that its concerns over the TMX project remain unresolved and outstanding to date.

DFO continues to be of the view that the proposed works, undertakings or activities associated with the Application for Authorization and the Addendum are unlikely to adversely affect any asserted or established Aboriginal or Treaty rights that Lyackson may have. However, DFO welcomes the opportunity to meet with Lyackson in the absence of participant funding and will continue to welcome any comments that Lyackson may provide.

## Cowichan Tribes

Cowichan Tribes was identified by DFO as being owed a lower depth of consultation on the *Haida* spectrum.

### Views from Cowichan Tribes and Responses provided by DFO

DFO first engaged with Cowichan Tribes on March 2, 2017, with a letter that provided a summary of the works, undertakings or activities described in the Application for Authorization that the Proponent anticipates will result in serious harm to fish. Within this letter, DFO noted that it is of the view that the proposed works, undertakings or activities, and the associated offsetting measures are unlikely to adversely impact Cowichan Tribes' asserted or established Aboriginal or Treaty rights. DFO also offered to provide a copy of the Application of Authorization to Cowichan Tribes, should they request it.

Having not received a response from Cowichan Tribes, DFO sent a follow-up letter dated April 3, 2017, seeking to understand how the proposed works, undertakings or activities may affect any asserted or establish Aboriginal or Treaty rights Cowichan Tribes may have. Again, DFO noted that it is of the view that any adverse impacts on these rights are unlikely.

On April 28, 2017, DFO received an e-mail from Cowichan Tribes in response to its letters dated March 2, 2017, and April 3, 2017. Cowichan Tribes expressed that they continue to be concerned with the overall environmental impacts of the TMX Project, including impacts on areas downstream of the Terminal expansion and the potential destruction and contamination of fish habitat in the Fraser River and Strait of Georgia, and reaffirmed their opposition to the entirety of the TMX Project. However, in response to DFO's request for comments regarding the Application for Authorization, Cowichan Tribes noted that they have no specific comments to provide and has deferred to Indigenous groups located closer geographically to the site.

DFO responded to Cowichan Tribes' e-mail dated April 28, 2017 on May 8, 2017, thanking Cowichan Tribes for their response and noting their comments regarding the broader TMX Project. DFO's consultation is scoped specifically to the Terminal expansion, however the concerns Cowichan Tribes has raised have been included within the Crown record.

### Record of Consultation – Groups that did not engage in Consultations

Thirty Indigenous Groups were identified as being owed a lower depth of consultation, based on the preliminary strength of claim assessment documented within the CAR for the marine LSA of the Terminal. These Groups are:

#### Stó:lō communities

Aitchelitz Band  
Chawathil First Nation  
Cheam (Pilalt) First Nation  
Katzie First Nation  
Kwantlen First Nation  
Kwaw-Kwaw-Apilt First Nation

#### Hul'qumi'num Communities

Cowichan Tribes  
Halalt First Nation  
Lake Cowichan First Nation  
Lyackson First Nation  
Penelakut Tribe  
Stz'uminus (Chemainus) First Nation

Kwikwetlem First Nation  
Leq'a:mel First Nation  
Matsqui First Nation  
Peters Band  
Popkum First Nation  
Scowlitz First Nation  
Seabird Island Indian Band  
Shxwha:y Village  
Shxw'ow'hamel First Nation  
Skawahlook First Nation  
Skowkale First Nation  
Skwah First Nation  
Soowahlie Indian Band  
Squiala First Nation  
Sumas First Nation  
Tzeachten First Nation  
Union Bar Band  
Yakweakwioose Band

Halalt First Nation, Katzie First Nation, Kwantlen First Nation, Kwikwetlem First Nation, Lyackson First Nation, and Cowichan Tribes engaged with DFO during consultation, and therefore the correspondence between those groups and DFO reflected a different level of consultation than the correspondence between groups that did not respond to DFO's letters and notices (as detailed above).

Three rounds of letters were sent to Groups on the lower end of the consultation spectrum that did not engage with DFO:

Round 1

Following receipt of the Proponent's Application for Authorization, on March 2, 2017, DFO sent out a letter to all Groups on the lower end of the consultation spectrum, providing a brief summary of the works, undertakings or activities described in the Application for Authorization that the Proponent anticipates will result in serious harm to fish, and the offsetting measures the Proponent is proposing to implement. Within this letter, DFO noted that it is of the view that the proposed works, undertakings or activities, and the associated offsetting measures are unlikely to adversely impact the addressed group's asserted or established Aboriginal or Treaty rights. The letter requested that the addressed group contact DFO by March 31, 2017, should they have any additional information or comments to provide on the potential effects the proposed Terminal expansion may have on their asserted or established Aboriginal or Treaty rights. Two figures were enclosed summarizing the potential effects of the proposed works and associated offsetting to provide a geographical reference of the extent of the Terminal expansion and therefore of its potential impacts to fish and fish habitat.

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### Round 2

On April 3, 2017, a follow-up letter was sent to each of the Groups on the lower end of the consultation spectrum that had not responded to DFO's initial letter dated March 2, 2017. This letter re-stated that DFO is of the view that the proposed works, undertakings or activities, and the associated offsetting measures are unlikely to adversely impact the addressed group's asserted or established Aboriginal or Treaty rights, and requested that the addressed group contact DFO by April 30, 2017, should they have any additional information or comments to provide.

### Round 3

Following receipt of the Proponent's Addendum, on June 27, 2017, DFO sent out a letter to the Groups on the lower end of the consultation spectrum that had not yet engaged with DFO, notifying them of the new information and providing a brief summary of the additional proposed works, undertakings or activities that were not included in the Application for Authorization. A brief description of the avoidance and mitigation measures proposed to reduce the effects of the Additional Works, and a description of the proposed offsetting measures was included in the letter. DFO noted that it continues to be of the view that the proposed works, undertakings or activities, and the associated offsetting measures are unlikely to adversely impact the addressed group's asserted or established Aboriginal or Treaty rights. Should the addressed group have any additional information or comments to provide, the letter requested that they contact DFO before July 21, 2017. Three figures were enclosed with the letter, depicting the location and scope of the Additional Works, the marine habitat potentially affected, and the proposed offsetting measures.

At the request of the Stó:lō Communities, rather than sending the letters from Round 3 and Round 4 to each Stó:lō community member individually, one letter was sent to the People of the River Referrals Office via e-mail with the Chiefs of each respective group Cc'd. The Hul'qumi'num Communities were each sent individual letters for the final two rounds, as they were in the first two rounds of correspondence.

### **Indigenous Groups from the BC Interior**

Indigenous groups from the BC Interior located along the pipeline right-of-way were not identified by DFO for consultation regarding the potential issuance of a *Fisheries Act* authorization for the proposed Westridge Marine Terminal expansion. While these groups did participate in the EA process for the TMX Project, during the regulatory stage, DFO determined that there were unlikely to be any impacts from the proposed works, undertakings or activities on the asserted or established Aboriginal or Treaty rights of BC Interior Indigenous groups.

DFO understands that Indigenous groups in the BC Interior harvest Pacific salmon, which may potentially occur in the vicinity of the Terminal during the juvenile phase of their life history. However, after considering the mitigation measures proposed by the Proponent (e.g., fish salvage and relocation, use of a turbidity curtain, etc.) and requiring conditions within a potential *Fisheries Act* Authorization (e.g., working within a least-risk fisheries windows, following pile driving best management practices, etc.)

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DFO is of the view that potential impacts to Pacific salmon will be avoided or mitigated. In particular, DFO is requiring in Condition 2.2.6<sup>24</sup> that all in-water construction activities within a 50-m buffer from the Westridge Marine Terminal be carried out during a specific work timing window, and Condition 2.2.9.3<sup>25</sup> requires a more conservative underwater sound threshold to be adhered to when working outside the least risk timing window, to avoid impacts from construction to out-migrating juvenile salmon. This condition ensures that no works are occurring within nearshore fish habitat which is important for juvenile salmon during their out-migration. With the implementation of the avoidance and mitigation measures specified in the Conditions of Authorization and in the Proponent's Application, DFO does not anticipate impacts to the asserted or established Aboriginal or Treaty rights (i.e., fishing rights) of BC Interior groups from the proposed terminal expansion.

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<sup>24</sup> Condition 2.2.6: "All nearshore in-water Project construction activities (within a 50-m horizontal distance seaward of the higher high water large tide level) at the Westridge Marine Terminal shall only be carried out during a work timing window from August 16 to March 15 each year, as described in the Memo from Trans Mountain Pipeline ULC to DFO, dated August 3, 2017 (Schedule A). This work timing window will allow additional time beyond the Burrard Inlet least risk timing window (August 16 – February 28) for the Proponent to conduct the works, undertakings or activities authorized here-in, while avoiding periods of spawning by herring, higher local abundance of finfish and invertebrates, and the timing and/or location of their sensitive life processes (e.g., out-migrating juvenile salmon)."

<sup>25</sup> Condition 2.2.9.3 "Outside of the least risk windows for Burrard Inlet (August 16 – February 28), a more conservative underwater sound threshold of 22.5 kPa (207 dB re: 1 µPa) will be adhered to, and monitored, to prevent injury to finfish. If sound levels exceed this threshold, or a fish kill is observed despite mitigation measures being in place, pile driving activities are to cease immediately and mitigation methods are to be reviewed and modified in consultation with DFO."

## **ANNEX A – Potential Mitigation and/or Accommodation Measures to address Project-related Marine Shipping**

### **Trans Mountain Expansion Project – Potential Mitigation and/or Accommodation measures that may address impacts to asserted or established Aboriginal Rights from increases in Project-related Marine Shipping**

#### **Context**

On February 7, 2017, the Trans Mountain Pipeline ULC (the “Proponent”) submitted an application for an authorization under the *Fisheries Act* to Fisheries and Oceans Canada (DFO) for the works, undertakings or activities related to the expansion of the Westridge Marine Terminal (the “Application for Authorization”), which is a component of the Trans Mountain Expansion Project (the “TMX Project”). DFO identified thirty-three Aboriginal groups that may have asserted or established Aboriginal or Treaty rights in the vicinity of the Terminal, and engaged in consultation with these groups in relation to its contemplated Crown conduct regarding potential issuance of a *Fisheries Act* authorization for the proposed terminal expansion. DFO’s assessment of the preliminary depth of consultation owed to each Aboriginal group is based on its understanding of each Aboriginal group’s preliminary strength of claim carried forward from the *Joint Federal/Provincial Consultation and Accommodation Report for the Trans Mountain Expansion Project* (the CAR), and DFO’s assessment of the seriousness of impacts to each group’s potential Aboriginal rights and title.

Through its review of Crown Consultations conducted during the environmental assessment (EA) phase and through consideration of potential impacts from the proposed terminal expansion, DFO has identified potential outstanding impacts to asserted or established rights and title that may not have been addressed through the EA. Particularly, DFO notes that *CAR Appendix C.2 - Musqueam Indian Band*, which is a matter of public record, states the following:

*“The Crown expects minor-to-moderate impacts as a result of WMT [Westridge Marine Terminal] construction, operations and Project-related marine vessels. In reaching this conclusion, the Crown has considered several factors [...], which are summarized as follows:*

- *Project-related pipeline, facility, and WMT construction and operation, and marine shipping activities are likely to have low to moderate magnitude environmental effects on freshwater and marine species harvested by Musqueam;*
- *Construction of WMT, the pipeline and associated facilities are likely to cause short-term temporary disruptions to Musqueam’s community members accessing traditional freshwater fishing and marine fishing and harvesting sites within the Project footprint; Project-related marine shipping activities are likely to cause temporary disruptions to activities or access to sites during the period of time Project-related tankers are in transit through Musqueam’s traditional territory; and*
- *Concerns identified by Musqueam regarding Project-related effects on social, cultural, spiritual, and experiential aspects of their freshwater fishing activities.*

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At this time, DFO is unaware of specific initiatives or measures that have been proposed by the Proponent or the Crown that will address the potentially outstanding moderate level of impact anticipated to affect Musqueam Indian Band's (MIB or Musqueam) right to fish. DFO acknowledges that Musqueam has an established Aboriginal right to fish for food, social and ceremonial purposes, as established by the Supreme Court of Canada decision in *R. v. Sparrow*. DFO's objective is to ensure that there is no unjustified infringement of Aboriginal rights. As such, the intent of this paper is to explore options where-in the Crown may address potentially outstanding impacts from increased TMX Project-related marine vessel traffic on Aboriginal rights. The options proposed are generally discussed in the context of potential outstanding impacts MIB's fishing rights, but may be more broadly applicable to asserted or established rights of other potentially affected Aboriginal groups.

#### **Options for consideration to address impacts from increased shipping on asserted or established Aboriginal rights and title.**

Mitigation Measures proposed through the EA (i.e., NEB Conditions and Proponent Commitments):

- As recommended by TERMPOL, the Proponent has committed to provide financial assistance for an enhanced education campaign for small vessel operators regarding safe boating practices, and to financially assist, via the Western Canada Marine Response Corporation (WCMRC), smaller vessels that are registered in the Fishermen's Oil Spill Emergency Team (FOSET) program to be fitted with Automatic Identification Systems (AIS) and radar reflectors to enhance safety. This would reduce the risk of increased vessel traffic to small vessel operators.
- The Proponent has committed to supporting the Pacific Salmon Foundation – Salish Sea Marine Survival Project, which aims to determine the primary factors affecting the survival of juvenile salmon and steelhead in the Salish Sea. Pacific salmon are of key importance to coastal Aboriginal groups, including MIB and Tsleil-Waututh Nation (TWN).
- NEB-imposed Condition 131 requires the Proponent to initiate a public outreach program prior to Project operations phase that will communicate information on Project-related timing and scheduling with affected marine users (including Transport Canada, The Canadian Coast Guard, the Chamber of Shipping for British Columbia, and commercial and tourism associations) and Aboriginal groups. This program will be developed in consultation with the Pacific Pilotage Authority.
- NEB-imposed Condition 134 requires the Proponent to file their Tanker Acceptance Standard and future updates with the NEB, while Condition 13 requires a plan for monitoring the potential adverse socio-economic effects resulting from construction activities to be filed. Aboriginal communities are encouraged to participate in construction monitoring, and Condition 98 requires the Proponent to file a plan to address the potential participation of Aboriginal communities.

Mitigation and/or Accommodation Measures available to DFO:

- **Increase FSC quota allocations** for Aboriginal groups whose fishing rights may be affected by increased marine shipping activities. This would require engagement with Fisheries Management and consultation with potentially affected Aboriginal Groups.
- **Trans Mountain Commitment 358** from its Commitments Tracking Table states, "Trans Mountain will consult with Fisheries and Oceans Canada (DFO) to determine whether the Pacific

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Salmon Foundation multi-year comprehensive 'Salish Sea Marine Survival Project' initiative can also be considered to be a scientifically defensible and useful recovery measure for resident killer whales by restoring an adequate and accessible food supply." This commitment could be utilized by DFO to recommend funding allocations to fish habitat restoration projects that may be a priority to coastal First Nations that may be affected by project-related marine shipping.

- **Require additional supplementary habitat restoration or offsetting as a condition of a potential *Fisheries Act Authorization (FAA)* to address priorities of MIB and/or TWN, which would go towards improving fisheries productivity in areas of interest to these Aboriginal groups.**
  - **TWN Priorities** – Shellfish Harvesting in Indian Arm, and restoration opportunities in Maplewood Flats in Burrard Inlet (\$200,000 ask from West Coast Energy – Special Partnerships Initiative).
  - **MIB Priorities** – Fraser River Estuary Connectivity Project (\$4.5 million ask from Coastal Restoration Fund – Oceans Protection Program); potential eulachon spawning habitat creation; creating marsh habitat in the north arm of the Fraser River.
- **Require the Proponent to engage with Aboriginal groups and/or the IAMC as a condition of a potential FAA in relation to updates to its Tanker Acceptance Standard required to be filed with the NEB 3 months prior to loading the first tanker at the Westridge Marine Terminal per NEB Condition 134. For example, any *Fisheries Act Authorization (FAA)* condition could be as follows:**

## **7.0 Supplementary Measures**

*7.1 With the goal of supporting meaningful engagement, reconciliation, and cooperation the Proponent shall develop and implement supplementary measures in consultation with Tsleil-Waututh Nation (TWN), the Vancouver Fraser Port Authority (VFPA) and Fisheries and Oceans Canada as follows:*

- 7.1.1 A Plan detailing the definition and scope of the supplementary measures (the Supplementary Measures Plan), including the means by which these measures shall be implemented (e.g., methodologies, procedures, resourcing, funding, etc.) shall be developed by the Proponent no later than December 31, 2018.*
- 7.1.2 To the extent possible, the Proponent shall incorporate information, comments, considerations, and feedback provided by TWN and VFPA in the development of the Supplementary Measures Plan, and shall implement the Supplementary Measures Plan no later than August 16, 2019. Where input provided by TWN and VFPA cannot be incorporated in the Supplementary Measures Plan, the Proponent shall provide written reasons why this input cannot be incorporated.*
- 7.1.3 The Supplementary Measures Plan shall be provided to DFO for review and approval 60 days prior to its implementation.*

*7.2 Notwithstanding Condition 7.1, the Proponent shall be relieved of all obligations outlined therein if DFO provides a letter to the Proponent in writing, notifying the Proponent that it is relieved of all the obligations detailed in Condition 7.1 (including its sub-conditions).*

## Consideration of Factors set out in Section 6 of the *Fisheries Act*

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### Background

Sections 6 and 6.1 of the *Fisheries Act* state:

*"6. Before recommending to the Governor in Council that a regulation be made in respect of section 35 or under paragraph 37(3)(c) or 43(1)(i.01) or subsection 43(5), and before exercising any power under subsection 20(2) or (3) or 21(1), paragraph 35(2)(b) or (c) or subsection 35(3), or under subsection 37(2) with regard to an offence under subsection 40(1) or with regard to harm to fish, the Minister shall consider the following factors:*

- (a) the contribution of the relevant fish to the ongoing productivity of commercial, recreational or Aboriginal fisheries;*
- (b) fisheries management objectives;*
- (c) whether there are measures and standards to avoid, mitigate or offset serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or that support such a fishery; and*
- (d) the public interest.*

*6.1 The purpose of section 6, and of the provisions set out in that section, is to provide for the sustainability and ongoing productivity of commercial, recreational and Aboriginal fisheries."*

The Minister of Fisheries and Oceans must consider the factors set out in sections 6 of the *Fisheries Act* with respect to decisions under paragraph 35(2)(b) of the *Fisheries Act*.

The purpose of the checklist is to record the information used to consider the factors set out in section 6 of the *Fisheries Act*. The information will be considered as part of the decision on the issuance or refusal of a paragraph 35(2)(b) *Fisheries Act* authorization, including those requested under emergency circumstances.

When completing this checklist, the *Fisheries Protection Policy Statement (2013)* and the *Fisheries Productivity Investment Policy (2013)* should be referenced for guidance.

## Checklist for Consideration of the Factors set out in Section 6 of the *Fisheries Act*

**For Referral (Referral Title / PATH Referral Number):** Trans Mountain Expansion Project - Westridge  
Marine Terminal Expansion / 17-HPAC-00071

This document provides the record of the consideration of the factors set out in section 6 of the *Fisheries Act*. This information will be considered as part of the decision on the issuance or refusal of a paragraph 35(2)(b) *Fisheries Act* authorization for the following work(s), undertaking(s) and/or activity(ies) after the receipt of a complete application<sup>1</sup>.

The works, undertakings, or activities associated with the project that are likely to result in serious harm to fish are:

- Installation of an approximately 363 m long bulkhead wall constructed via:
  - excavation of existing shoreline rip-rap and foreshore substrates;
  - installation of circular sheet pile cells to form the wall; and
  - in-filling within the circular sheet pile cells and backfilling of the area between the existing shoreline at the terminal and the bulkhead wall.
- Installation of permanent piles for the construction of three new loading berths, an access trestle, a utility dock, and a foam water supply pump house platform;
- Installation of working piles in the upper intertidal zone to support a marine construction office; and
- Installation of a surface water run-off outfall at the western end of the terminal foreshore expansion within the upper intertidal zone.

### Proposed by:

Trans Mountain Pipeline L.P., by its general partner Trans Mountain Pipeline ULC  
300 – 5 Avenue SW., Suite 2700,  
Calgary, AB T2P 5J2 Canada

### A. Paragraph 6(a) – Consideration of the contribution of the relevant fish to the ongoing productivity of commercial, recreational or Aboriginal fisheries

The objective of considering this factor is:

- to understand the impact of the project on fish and fish habitat and in turn, the associated impact on the components of productivity.

Refer to 8.1 "Scope of Application of the Prohibition (Section 35)" of the *Fisheries Protection Policy Statement (2013)* for more information.

A1	Which form(s) of residual serious harm to fish is likely to be caused by the proposed project? (Note:	<input type="checkbox"/> Death of fish <input checked="" type="checkbox"/> Permanent alteration to fish habitat
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<sup>1</sup> Information requirements for applications are set out in the *Applications for Authorization under Paragraph 35(2)(b) of the Fisheries Act Regulations*.

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	<p>residual serious harm to fish refers to the effects which occur <u>after</u> the application of avoidance and/or mitigation measures, but <u>before</u> offsetting measures as identified in the <i>Fisheries Productivity Investment Policy (2013)</i>). Avoidance, mitigation and offsetting measures are defined in section 1.3 "Hierarchy of Measures for Fisheries Protection" within this Policy.</p>	<input checked="" type="checkbox"/> Destruction of fish habitat																												
A2	<p>Which fish species and fish life stages are likely to be affected? (For example: Ninespine Stickleback: adult and eggs, Lake Trout: adult, juvenile and eggs, etc.)</p> <p><i>Note: Only the key commercial, recreational and Aboriginal fish species that may be impacted are outlined here-in. Other species that may be present include:</i></p> <ul style="list-style-type: none"><li>• Eulachon</li><li>• Anchovy</li><li>• Gunnels</li><li>• Sculpins</li><li>• Anchovy</li><li>• Orange Sea pen</li><li>• Pricklebacks</li><li>• Surfperch</li><li>• Kelp Greenling</li><li>• Red Rock Crab</li><li>• Hermit Crab</li><li>• California Sea Cucumber</li></ul> <p>Marine mammal species that may be present include:</p> <ul style="list-style-type: none"><li>• Harbour Seals</li><li>• Steller Sea Lions</li><li>• Harbour Porpoise</li><li>• Southern Resident and Transient (Bigg's) Killer Whales</li><li>• California Sea Lions</li><li>• False Killer Whales</li><li>• Grey Whales</li><li>• Humpback Whales</li><li>• Minke Whales</li><li>• Northern Elephant Seals</li><li>• Northern Fur Seals</li></ul>	<table border="1"><thead><tr><th>Fish Species</th><th>Life Stage(s)</th></tr></thead><tbody><tr><td>Sockeye Salmon</td><td>Juveniles, Adults</td></tr><tr><td>Chum Salmon</td><td>Juveniles, Adults</td></tr><tr><td>Coho Salmon</td><td>Juveniles, Adults</td></tr><tr><td>Pink Salmon</td><td>Juveniles, Adults</td></tr><tr><td>Chinook Salmon</td><td>Juveniles, Adults</td></tr><tr><td>Pacific Herring</td><td>Eggs, Juveniles, Adults</td></tr><tr><td>Rockfish (copper, quillback)</td><td>Juveniles, Adults</td></tr><tr><td>Lingcod</td><td>Juveniles, Adults</td></tr><tr><td>Pacific Sand Lance</td><td>Eggs, Juveniles, Adults</td></tr><tr><td>Surf Smelt</td><td>Adults</td></tr><tr><td>Flatfish Species</td><td>Larvae, Juveniles, adults</td></tr><tr><td>Dungeness Crab</td><td>Larvae, Juveniles, Adults</td></tr><tr><td>Shrimp, Prawns, Bivalves</td><td>Larvae, Juveniles, Adults</td></tr></tbody></table>	Fish Species	Life Stage(s)	Sockeye Salmon	Juveniles, Adults	Chum Salmon	Juveniles, Adults	Coho Salmon	Juveniles, Adults	Pink Salmon	Juveniles, Adults	Chinook Salmon	Juveniles, Adults	Pacific Herring	Eggs, Juveniles, Adults	Rockfish (copper, quillback)	Juveniles, Adults	Lingcod	Juveniles, Adults	Pacific Sand Lance	Eggs, Juveniles, Adults	Surf Smelt	Adults	Flatfish Species	Larvae, Juveniles, adults	Dungeness Crab	Larvae, Juveniles, Adults	Shrimp, Prawns, Bivalves	Larvae, Juveniles, Adults
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	<ul style="list-style-type: none"><li>• Pacific White-sided Dolphins</li></ul>													
A3	What types of fish habitat are likely to be affected?	<table border="1"><thead><tr><th>Fish Habitat Affected</th><th>Fish Species</th></tr></thead><tbody><tr><td><input checked="" type="checkbox"/> Nursery</td><td>Dungeness Crab, Shrimps, Prawns, Bivalves</td></tr><tr><td><input checked="" type="checkbox"/> Rearing</td><td>Pacific Salmon, Pacific Herring, Rockfish, Lingcod, Surf Smelt, Dungeness Crab, Flatfish species, Shrimps, Prawns, Bivalves</td></tr><tr><td><input checked="" type="checkbox"/> Food supply</td><td>Pacific Salmon, Pacific Herring, Rockfish, Lingcod, Surf Smelt, Dungeness Crab, Flatfish species, Shrimps, Prawns, Bivalves</td></tr><tr><td><input checked="" type="checkbox"/> Spawning</td><td>Pacific Herring, Rockfish, Lingcod, Dungeness Crab, Flatfish species, Shrimps, Prawns, Bivalves</td></tr><tr><td><input checked="" type="checkbox"/> Migration areas</td><td>Pacific Salmon, Pacific Herring, Dungeness Crab</td></tr></tbody></table>	Fish Habitat Affected	Fish Species	<input checked="" type="checkbox"/> Nursery	Dungeness Crab, Shrimps, Prawns, Bivalves	<input checked="" type="checkbox"/> Rearing	Pacific Salmon, Pacific Herring, Rockfish, Lingcod, Surf Smelt, Dungeness Crab, Flatfish species, Shrimps, Prawns, Bivalves	<input checked="" type="checkbox"/> Food supply	Pacific Salmon, Pacific Herring, Rockfish, Lingcod, Surf Smelt, Dungeness Crab, Flatfish species, Shrimps, Prawns, Bivalves	<input checked="" type="checkbox"/> Spawning	Pacific Herring, Rockfish, Lingcod, Dungeness Crab, Flatfish species, Shrimps, Prawns, Bivalves	<input checked="" type="checkbox"/> Migration areas	Pacific Salmon, Pacific Herring, Dungeness Crab
Fish Habitat Affected	Fish Species													
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A4	Based upon the responses to A1 to A3, which of the following lifecycle functions (components of productivity) will likely be affected?	<table border="1"><thead><tr><th>Components of Productivity Affected</th><th>Fish Species</th></tr></thead><tbody><tr><td><input checked="" type="checkbox"/> Growth</td><td>Pacific Salmon, Pacific Herring, Rockfish, Lingcod, Dungeness Crab, Flatfish Species, Shrimps, Prawns, Bivalves</td></tr><tr><td><input checked="" type="checkbox"/> Performance</td><td>Pacific Salmon, Pacific Herring, Dungeness Crab, Flatfish Species, Shrimps, Prawns, Bivalves</td></tr><tr><td><input checked="" type="checkbox"/> Survival</td><td>Pacific Salmon, Pacific Herring, Rockfish, Lingcod, Surf Smelt, Dungeness Crab, Flatfish Species, Shrimps, Prawns, Bivalves</td></tr><tr><td><input checked="" type="checkbox"/> Migration</td><td>Pacific Salmon, Pacific Herring</td></tr><tr><td><input checked="" type="checkbox"/> Reproduction</td><td>Pacific Herring, Rockfish, Lingcod, Surf Smelt, Dungeness Crab, Flatfish Species, Shrimps, Prawns, Bivalves</td></tr></tbody></table>	Components of Productivity Affected	Fish Species	<input checked="" type="checkbox"/> Growth	Pacific Salmon, Pacific Herring, Rockfish, Lingcod, Dungeness Crab, Flatfish Species, Shrimps, Prawns, Bivalves	<input checked="" type="checkbox"/> Performance	Pacific Salmon, Pacific Herring, Dungeness Crab, Flatfish Species, Shrimps, Prawns, Bivalves	<input checked="" type="checkbox"/> Survival	Pacific Salmon, Pacific Herring, Rockfish, Lingcod, Surf Smelt, Dungeness Crab, Flatfish Species, Shrimps, Prawns, Bivalves	<input checked="" type="checkbox"/> Migration	Pacific Salmon, Pacific Herring	<input checked="" type="checkbox"/> Reproduction	Pacific Herring, Rockfish, Lingcod, Surf Smelt, Dungeness Crab, Flatfish Species, Shrimps, Prawns, Bivalves
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**B. Paragraph 6(b) – Consideration of Fisheries Management Objectives (FMOs)**

Fisheries Management Objectives are the stated biological, ecological, and socio-economic goals for a fishery. They may not be explicitly titled as FMOs and may include, but are not limited, to provincial fisheries plans, Integrated Fisheries Management Plans, Species at Risk Recovery strategies and action plans, and harvesting or fishing plans developed through co-management arrangements established under land claim agreements.

The objectives of considering this factor are:

- to identify the relevant stated fisheries management goals for the affected area; and
- to determine if any effects of the project and the avoidance, mitigation and offsetting measures may affect the achievement of the goal(s) of those FMOs.

B1	Are Fisheries Management Objectives (FMOs) available?  If yes, identify the FMO document(s) relevant to the affected area (fishery/ies) and briefly describe the goal(s) relative to the management of the fisheries.  If no, the Department's goal "...to provide for the sustainability and ongoing productivity of commercial,	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  The Department's goal is "... to provide for the sustainability and ongoing productivity of commercial, recreational and Aboriginal fisheries" as set out in the <i>Fisheries Protection Policy Statement</i> (2013).  <b>Relevant FMO documents and their goals include:</b>
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	<p><i>recreational and Aboriginal fisheries</i>" as set out in the <u><i>Fisheries Protection Policy Statement (2013)</i></u>, should be used as the FMO goal.</p>	<p>DFO's <i>Rockfish Conservation Strategy</i></p> <p><u>Objectives:</u></p> <ul style="list-style-type: none"><li>• Aims to protect and conserve rockfish populations; and</li><li>• Designed to alleviate further rockfish population declines.</li></ul> <p><i>Canada's Policy for Conservation of Wild Pacific Salmon (WSP)</i></p> <p><u>Objectives:</u></p> <ul style="list-style-type: none"><li>• Safeguard the genetic diversity of wild Pacific salmon;</li><li>• Maintain habitat and ecosystem integrity; and</li><li>• Manage fisheries for sustainable benefits.</li></ul> <p><i>Crab by Trap 2017, Pacific Region - Integrated Fisheries Management Plan</i></p> <p><u>Objectives:</u></p> <ul style="list-style-type: none"><li>• To meet conservation objectives and ensure healthy and productive fisheries and ecosystems;</li><li>• Manage fisheries to provide opportunities for economic prosperity;</li><li>• To provide access to crab for First Nation FSC, Recreational, and Commercial opportunities;</li><li>• To meet the federal Crown's obligations regarding Aboriginal fisheries for food, social and ceremonial purposes; and</li><li>• To provide access to crab to all harvesters</li></ul>
B2	<p>Will the effects on the components of fisheries productivity described in A4 affect the ability to achieve the goal(s) stated in B1 above?</p> <p>If yes, will the identified avoidance, mitigation and offsetting measures identified in C below address those effects such that the goal(s) stated in B1 above can be achieved?</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> Partially <input type="checkbox"/> No</p> <p>The effects described in A4 will affect the ability to achieve the goal(s) stated in B1 above, however the avoidance, mitigation and offsetting measures identified in Section C below have been proposed to minimize or offset those effects such that progress towards achieving objectives stated in B1 will not be impaired, and such that the Department's overarching goal of providing for the sustainability and ongoing productivity of</p>

	<p>commercial, recreational and Aboriginal fisheries" as set out in the <i>Fisheries Protection Policy Statement (2013)</i> is achieved.</p> <p>The proposed subtidal and intertidal rock reefs in Trans Mountain's Offsetting Plan are expected to primarily benefit groundfish species (e.g., rockfish and lingcod). Consistent with DFO's <i>Rockfish Conservation Strategy</i>, the rock-reef offsetting helps to protect and conserve rockfish populations and provides habitat to help maintain the productivity of inshore rockfish species, including the copper and quillback rockfish.</p> <p>The reefs will be located in the photic zone of nearshore waters, and will provide foraging, rearing and refuge habitat for out-migrating juvenile Pacific salmon. Consistent with Canada's <i>Policy for Conservation of Wild Pacific Salmon</i>, the rock reefs will contribute to the integrity and functioning of the marine ecosystem, providing benefits for wild Pacific salmon and the fisheries that rely on them.</p> <p>Consistent with the <i>Crab by Trap 2017, Pacific Region - Integrated Fisheries Management Plan</i>, the reefs will contribute to enhancing the health and productivity of fisheries and the marine aquatic ecosystem in Burrard Inlet, which has been historically impacted by high levels of urban development. The reefs will benefit Dungeness crabs through increases in primary and secondary productivity, which will provide increased foraging opportunities for Dungeness crabs. The seaward extent of the rock reefs is adjacent to soft-sediment areas most likely to be used by Dungeness crabs (i.e., around depths of -13 to -18 CD based on sampling data provided by the Proponent). The reefs are thus located at depths that minimize impacts to Dungeness crabs while increasing primary and secondary productivity, enhancing foraging and refuge habitat for Dungeness crabs. In addition, because the reefs are located in the vicinity of a DFO Important Area for Dungeness Crabs, the productivity generated by the reefs may serve to benefit crab populations in this area as well. The added structural complexity of the reefs is also anticipated to provide habitat for a greater overall diversity of species than those currently present, which may increase opportunities for commercial, recreational, and Aboriginal harvesters.</p>
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C. Paragraph 6(c) – Consider whether there are measures to avoid, mitigate or offset serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or that support such a fishery

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The objective of considering this factor is:

- to verify that the proposed measures and standards to avoid, mitigate or offset serious harm to fish are consistent with the principles set out in the Fisheries Productivity Investment Policy (2013).

C1	Is the application for authorization in response to an emergency <sup>2</sup> circumstance?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
C2	Will avoidance measures that are practically feasible to avoid serious harm to fish be included as conditions of the authorization? Avoidance measures are measures to design and locate project elements and activities to prevent or reduce aspects of serious harm to fish from occurring.  If no, provide the rationale for why not following the "Hierarchy of Measures for Fisheries Protection" as set out in part 1.3 of the <u>Fisheries Productivity Investment Policy (2013)</u> is appropriate?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  <b>Rationale:</b>  Avoidance measures, including design and location elements of the Project were considered during the EA phase. In addition, avoidance measures to avoid serious harm to fish were proposed in the Application for Authorization and the Addendum. The Conditions of Authorization will require the Proponent to carry out the works, undertakings or activities in accordance with those avoidance measures, as they are described within these two aforementioned documents and other documents listed in Schedule A of the Authorization.  Examples of proposed avoidance measures include: <ul style="list-style-type: none"><li>• Designing the Terminal expansion such as to limit the in-water footprint and the shoreline infill area, and to eliminate the need for dredging to accommodate vessel berths, in order to reduce potential adverse effects on marine fish and fish habitat; and</li><li>• Conducting construction activities during a least-risk timing window (August 16 to March 15), including the removal of the existing small dock, in-water excavation of riprap, installation of sheet pile cells forming the bulkhead wall, and a portion of the in-filling behind the bulkhead wall; and</li><li>• Primarily restricting in-water impact hammer driving to the least-risk timing window. When working outside of the least-risk window a more conservative underwater sound threshold will be adhered to as required in the Conditions of Authorization.</li></ul>

<sup>2</sup> Information required to be submitted by a proponent seeking an authorization in response to an emergency circumstance does not include measures to avoid, mitigate or offset serious harm to fish, however, appropriate measures to avoid, mitigate and/or offset serious harm to fish can be included in as conditions of an authorization.

C3	<p>Will mitigation measures that are practically feasible to mitigate serious harm to fish be included as conditions of the authorization?</p> <p>If no, provide the rationale for why not following the "Hierarchy of Measures for Fisheries Protection" as set out in part 1.3 of the <u><i>Fisheries Productivity Investment Policy (2013)</i></u> is appropriate?</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><b>Rationale:</b></p> <p>The Conditions of Authorization will require the implementation of mitigation measures that are commonly used and technically feasible to mitigate impacts to fish and fish habitat. The location and design of the works, undertakings or activities are required to be consistent with what is described within the Application for Authorization and the Addendum. A qualified environmental professional is required to be on-site during in-water works, undertakings and activities to monitor them and ensure that avoidance and mitigation measures are effective. The Conditions of Authorization will also require Trans Mountain Pipeline ULC to submit monthly construction monitoring reports and a post-construction monitoring report, indicating whether the avoidance and mitigation standards are being conducted in accordance to the Conditions.</p> <p>Examples of mitigation measures included in the conditions of authorization include:</p> <ul style="list-style-type: none"><li>• Implementation of effective sediment and erosion control measures (e.g., a turbidity curtain) before starting construction, and maintained during construction;</li><li>• The requirement to design and screen all pump intakes in accordance to DFO guidelines;</li><li>• Conducting fish salvage and relocations prior to the start of construction to avoid and minimize adverse impacts to fish;</li><li>• The use of a vibratory hammer for pile driving where practical and feasible, and the requirement that all in-water pile driving activities to be monitored via hydrophone to ensure underwater peak pressures do not result in adverse impacts to fish;</li><li>• The requirement to maintain an underwater noise threshold to avoid injury to fish, and a more conservative underwater noise threshold for work conducted outside of the least-risk windows; and</li><li>• The requirement of a ramp-up period when commencing or recommencing pile driving to enable any fish or marine mammals that may be in the area to leave the area before pressure and noise levels reach their peak.</li></ul> <p>As part of National Energy Board (NEB) Certificate Condition No. 81, the Proponent is required to develop and</p>
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		implement its Westridge Marine Terminal Environmental Protection Plan (EPP). This EPP includes mitigation measures that will help mitigate impacts to fish and fish habitat from expansion of the terminal.
C4	<p>Identify the type(s) of proposed offsetting measure(s) as set out in part 2.3 of the <i>Fisheries Productivity Investment Policy</i> (2013).</p> <p>If chemical or biological manipulations are proposed, provide reasons why this measure is appropriate in the circumstances.</p> <p>Offsetting measures are undertaken to counterbalance unavoidable serious harm to fish resulting from a project, with the goal of maintaining or improving the productivity of the commercial, recreational or Aboriginal fishery.</p>	<p><input type="checkbox"/> Habitat restoration/enhancement <input checked="" type="checkbox"/> Habitat creation <input type="checkbox"/> Chemical or biological manipulations*</p> <p><input type="checkbox"/> Complementary measures (note that complementary measures may only be applied to a maximum of 10% of the required amount of offsetting)</p> <p><b>Rationale:</b></p> <p>As there will be serious harm to fish after the application of avoidance and mitigation measures, the Proponent has developed an Offsetting Plan to undertake offsetting measures to counterbalance potential impacts to the productivity of commercial, recreational and Aboriginal fisheries.</p> <p>The Offsetting Plan, as outlined in the Application for Authorization, aims to construct new fish habitat in the vicinity of the impact that will result from the works, undertakings or activities, and will offset losses to fisheries productivity associated with the habitat permanently altered or destroyed due to the works, undertakings or activities (approximately 6,578 m<sup>2</sup>). The Offsetting Plan aims to offset impacts to fish and fish habitat through the construction of a rock reef complex (approximately 9,011 m<sup>2</sup>), which will provide diverse and complex fish habitat characteristics intended to support finfish and invertebrates.</p> <p>The location and the design of the proposed offsetting are consistent with DFO's <i>Fisheries Productivity Investment Policy: A Proponent's Guide to Offsetting</i>, as it (a) counterbalances unavoidable serious harm to fish and (b) maintains or improves the productivity of the commercial, recreational or Aboriginal fishery. Construction of the rock-reef habitat will result in an offsetting ratio of approximately 1.4:1. This offsetting ratio is anticipated to counterbalance any residual serious harm to fish from the proposed works, undertakings or activities, and will account for temporal lags associated with colonization of the new reef habitat and the establishment and development of primary and secondary productivity. Creation of the rock reefs will provide spawning, rearing, refuge and foraging opportunities for finfish including rockfish, lingcod, Pacific salmon, and</p>

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Pacific herring, and increase primary and secondary productivity which will benefit invertebrate species such as Dungeness crabs.

Detailed information on the proposed offsetting plan and DFO's assessment of the suitability of the offsetting is provided in the Offsetting Summary Report for the Westridge Marine Terminal Expansion.

The offsetting measures that will be implemented will:

- Be composed of three different types of rock reefs (a nursery reef, an integrated reef, and an adult reef) that cover a total area of 9,011 m<sup>2</sup>,
- Provide refuge, foraging and migratory habitat for finfish, including juvenile salmon;
- Increase the diversity and productivity of fish associated with rock reefs by encouraging algal growth, providing foraging and refuge habitat for groundfish, finfish, and invertebrate species, and attracting predatory fish;
- Increase the structural complexity of the habitat in the area by increasing the availability and diversity of interstitial spaces within the vertical profile of the water column;
- Through the creation of subtidal reef complexes primarily benefit groundfish species and invertebrates, while intertidal reefs will provide valuable habitat for migrating juvenile salmon and other nearshore species.

As outlined in the Conditions of Authorization, Trans Mountain ULC will be required to follow an offsetting monitoring schedule which includes the submission of a post-construction monitoring report within 90 days of when the offsetting construction is complete, and the submission of effectiveness monitoring reports 1, 2, 4, 6, 8, and 10 years following the completion of offsetting construction. In addition to DFO, all forms of monitoring reports will be required to be shared with the Indigenous Advisory and Monitoring Committee (IAMC) and, if the IAMC communicates concerns related to the content of any monitoring report, Trans Mountain shall meet with DFO and the IAMC to discuss those concerns. In the event that monitoring activities and/or reports indicate non-compliance with any of the Conditions of Authorization, including the Offsetting Plan, remedial actions and a timeline for their implementation must be provided by Trans Mountain to

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		DFO and the IAMC in a timely manner.
C5	<p>Does the proposed offsetting plan meet the guiding principles for offsetting as set out in part 2.2 the <i>Fisheries Productivity Investment Policy (2013)</i>?</p> <p>If no, which of the principle(s) for offsetting measures will not be met: [Check all that apply]</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input checked="" type="checkbox"/> Principle 1: Offsetting measures must support fisheries management objectives or local restoration priorities <input checked="" type="checkbox"/> Principle 2: Benefits from offsetting measures must balance project impacts <input checked="" type="checkbox"/> Principle 3: Offsetting measures must provide additional benefits to the fishery <input checked="" type="checkbox"/> Principle 4: Offsetting measures must generate self-sustaining benefits over the long term.</p> <p><b>Rationale:</b> The proposed offsetting plan meets all of the guiding principles:</p> <p><b>Principle 1: Offsetting measures must support fisheries management objectives or local restoration priorities.</b> The rock-reef offsetting is designed to provide habitat for inshore rockfish and is located within the Eastern Burrard Inlet Rockfish Conservation Area (RCA). Consistent with DFO's Rockfish Conservation Strategy, the rock-reef offsetting helps to protect and conserve rockfish populations and provides habitat to help maintain the productivity of inshore rockfish species, including the copper and quillback rockfish. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assessed the quillback rockfish and threatened in 2009. The rock-reef offsetting will help maintain or enhance local populations for this species, and thus helps support local restoration priorities within the RCA, consistent with FMO's identified in section B1.</p> <p><b>Principle 2: Benefits from offsetting measures must balance project impacts.</b> Construction of the rock-reef habitat is anticipated to result in an offsetting ratio of approximately 1.4:1. DFO is of the view that this offset ratio will adequately offset losses to</p>

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	<p>commercial, recreational and Aboriginal (CRA) fisheries productivity from the works, undertakings or activities anticipated to result in serious harm to fish. In addition, to counterbalancing unavoidable residual serious harm to fish, the higher offsetting ratio (i.e., &gt; 1:1) will adequately account for temporal lags associated with colonization of the new reef habitat, and the establishment and development of primary and secondary productivity. The reefs are anticipated to increase habitat complexity and diversity in the vicinity of the terminal, thereby increasing species richness and diversity, and overall productivity.</p> <p><b>Principle 3: Offsetting measures must provide additional benefits to the fishery.</b></p> <p>In addition to counterbalancing potential residual serious harm to fish resulting from the works, undertakings or activities and accounting for temporal lags in the onset of the productive capacity, over time, the habitat created in excess of the 1:1 ratio should provide additional benefits to CRA fisheries in the long-term. Furthermore, the rock reef offsetting has been designed to enhance the structural complexity of the fish habitat in the area beyond what is currently present, by increasing the availability of interstitial spaces within the vertical profile of the water column, which will provide valuable foraging and refuge habitat for marine fish and invertebrates. For examples, the seaward extent of the rock reefs is adjacent to soft-sediment areas most likely to be used by Dungeness crabs (i.e., around depths of -13 to -18 CD based on sampling data provided by the Proponent). The reefs are thus located at depths that minimize impacts to Dungeness crabs while increasing primary and secondary productivity, enhancing foraging and refuge habitat for Dungeness crabs. In addition, because the reefs are located in the vicinity of a DFO Important Area for Dungeness Crabs, the productivity generated by the reefs may serve to benefit crab populations in this area as well. The added structural complexity of the reefs is anticipated to provide habitat for a greater overall diversity of species than those currently present.</p> <p><b>Principle 4: Offsetting measures must generate self-sustaining benefits over the long term.</b></p> <p>The proposed rock reefs have been designed to increase</p>
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	<p>structural habitat complexity in comparison to existing marine fish habitat within the proposed footprint of the terminal expansion. The existing habitat consists largely of rocky rip-rap intertidal and subtidal substrate, which was used to armour the face of the existing terminal, along with areas of sandy soft-bottom sediment which are common throughout Burrard Inlet. By replacing this habitat with the proposed rock reefs, the availability and diversity of interstitial spaces within the vertical profile of the water column will be increased. The result is new fish habitat that will provide increased foraging, refuge, and rearing habitat for a diversity of species, primarily targeting rockfish but also benefiting invertebrates, salmon and other finfish, algal species, and other species of the nearshore. Providing the reefs function as intended and are not disturbed, they should provide valuable habitat for fish and sustain CRA fisheries productivity for the life of the project and over the long-term.</p> <p>To ensure that the rock reefs are functioning as intended and are effective at offsetting any residual serious harm to fish associated with the terminal, DFO will include conditions related to implementation and monitoring of the offsetting measures. DFO will also include conditions that ensure the implementation of contingency measures, as indicated by the Proponent in the Application for Authorization, should monitoring indicate that the offsetting is not functioning as intended (Conditions 4.1 – 4.6 in the Authorization).</p> <p>Contingency offsetting measures are intended to be implemented in the event that the rock reef complex is not functioning as intended. These contingency offsetting measures could include altering the existing reef components to improved their effectiveness as fish habitat, constructing additional rock-reef offsetting at an alternate site, or potentially purchasing habitat banking (e.g., from the Vancouver Fraser Port Authority).</p>	
C6	<p>Are there uncertainties in developing and implementing the offsetting measures, as described in part 3.2 the <u>Fisheries Productivity Investment Policy (2013)</u> (step 3b)?</p> <p>If yes, describe the uncertainties.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Although the offsetting proposed is technically and biologically feasible, and has previously been implemented successfully in other projects, changing oceanographic and</p>

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	<p>Are these uncertainties being addressed through the offsetting plan or other terms and conditions of the authorization?</p> <p>If no, provide the rationale for why uncertainties cannot be addressed.</p>	<p>environmental conditions (e.g., El Niño, La Niña, climate change, etc.), and accidents and malfunctions (e.g., spills, collisions, etc.) may affect the structure and function of the reefs, and as a result, their effectiveness as fish habitat.</p> <p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><b>Rationale:</b></p> <p>To ensure that the rock reefs are functioning as intended and are effective at offsetting any residual serious harm to fish associated with the terminal expansion, DFO will include conditions within the Authorization related to implementation and monitoring of the offsetting measures. DFO will also include conditions that ensure the implementation of contingency measures, as indicated by the Proponent in the Application for Authorization, should monitoring indicate that the offsetting is not functioning as intended (Conditions 4.1 – 4.6).</p> <p>Contingency offsetting measures are intended to be implemented in the event that the rock reef complex is not functioning as intended. These contingency offsetting measures could include altering the existing reef components to improve their effectiveness as fish habitat, constructing additional rock-reef offsetting at an alternate site, or potentially purchasing habitat banking (e.g., from the Vancouver Fraser Port Authority).</p>
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**D. Paragraph 6(d) – Consider the public interest**

The consideration of public interest (i.e., factor 6(d)), in relation to the sustainability and ongoing productivity of commercial, recreational, and Aboriginal fisheries may be addressed through the consideration of the first three Section 6 factors given potential overlap: a) the contribution of relevant fish; b) fisheries management objectives; and c) measures and standards to avoid, mitigate or offset serious harm to fish (i.e., A, B, and C of this document), however below it is addressed as a discrete factor.

Factor 6(d) allows the Minister to consider issues relevant to the public interest in order to determine whether the issuance of a s. 35(2)(b) authorization will provide for the sustainability and ongoing productivity of commercial, recreational, and Aboriginal fisheries. This is articulated by s. 6.1, which sets out the purpose of s. 6, and the purpose of the provisions set out in s. 6. Section 35(2)(b) is a provision set out in s. 6.

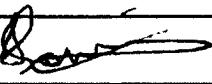
The objective of considering this factor is:

- to document public interest considerations and the sources of that information.

D1	<p>In the consideration of the other factors (A, B and C of this document) are there topics that may require further examination in relation to commercial, recreational or Aboriginal fisheries? (For example: the effects of the project affect the ability to achieve the goals set out in the FMOs; the sustainability and ongoing productivity of fisheries is at risk; the offsetting plan does not meet the guiding principles for offsetting, etc.).</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Public input was provided during the NEB hearings by Intervenors, and through the Report from the Ministerial Panel for the Trans Mountain Expansion Project. No public consultation was conducted during this regulatory review process as there is no requirement to do so. However, members of the public have expressed their views regarding the TMX Project as a whole in letters and emails to the Minister and other senior departmental officials. No new information has been provided in correspondence from the public during the regulatory stage that has not already been considered during the environmental assessment phase. Issues raised have largely related to the effects of the TMX Project at pipeline watercourse crossings, the potential for oil spills, and the potential for effects to Southern Resident Killer Whale from increased project-related marine vessel traffic. With the implementation of avoidance, mitigation and offsetting measures, DFO is of the view that the issuance of the Authorization will provide for the ongoing sustainability and productivity of CRA fisheries.</p>
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**E. Other Comments (optional):**

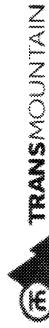
- Identify any issues that arise from other legal requirements that affect the decision on whether to issue an authorization that require further consideration; and
- Identify any other considerations which could be relevant to the issuance or refusal to authorize under paragraph 35(2)(b) of the *Fisheries Act*.

Prepared by:	Alston Bonamis
Title:	A/ Senior Fisheries Protection Biologist
Date:	05/09/2017
Signature:	

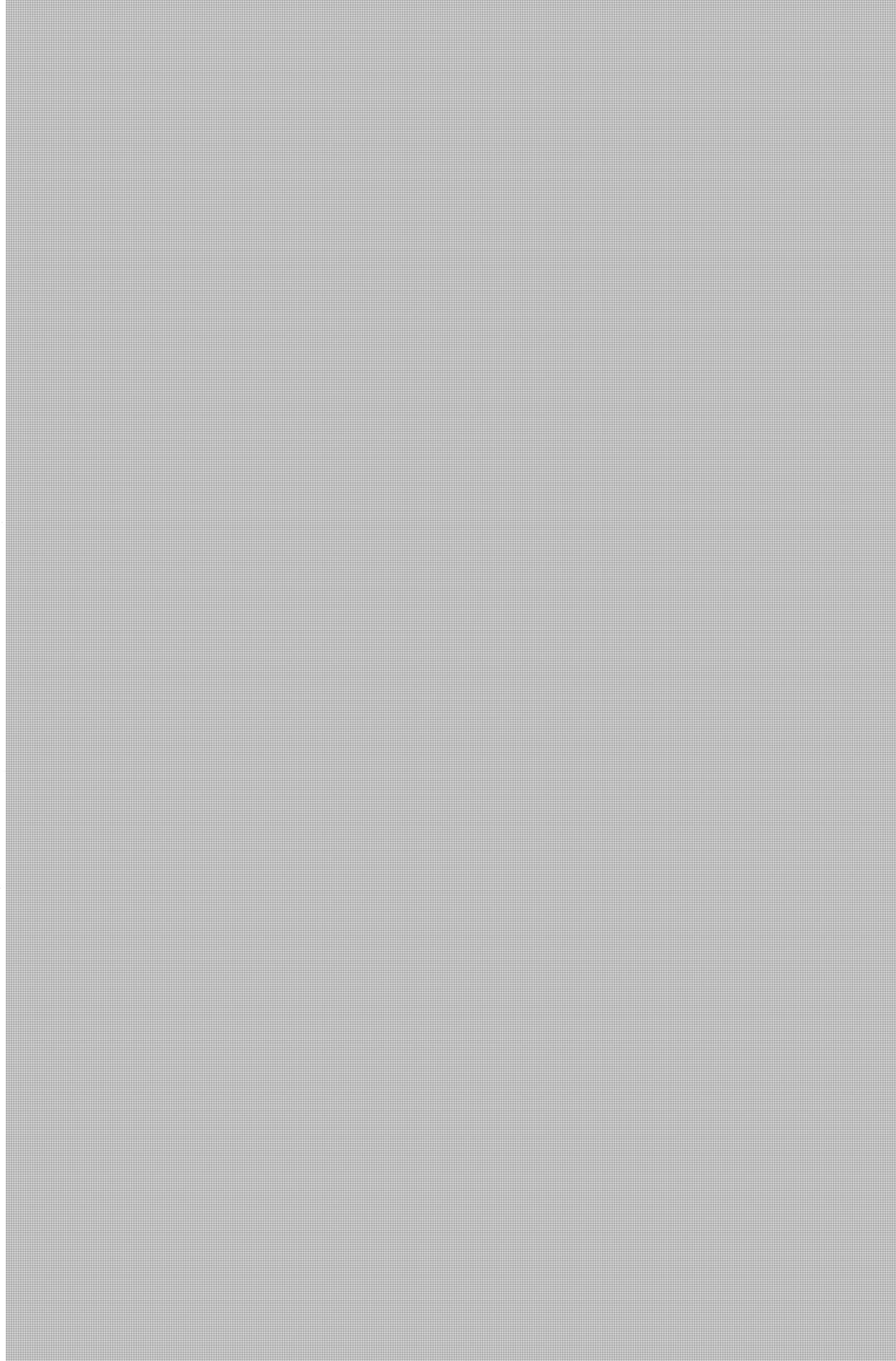
I concur that the information for the consideration of the section 6 factors has been provided:

Name:	Diana Trager
Title:	Regional Director, Ecosystem Management, Pacific Region
Date:	SEP 07 2017
Signature:	

s.20(1)(c)



Mutual Benefits Agreements w/ Aboriginal Groups: Employment and Training  
As of June 15, 2017



Office of the  
Prime Minister



Cabinet du  
Premier ministre

Ottawa, Canada K1A 0A2

## CANADA'S OCEANS PROTECTION PLAN

### The Plan: Summary

Canada is a maritime nation, with more coastline than any other country in the world. Canadians rely on their coasts and waterways for recreation, to deliver products to market, and to earn their livelihood, but also cherish them for cultural reasons. The Oceans Protection Plan will help keep Canadians waters and coasts safe and clean, for today's use and for future generations. The Government of Canada will partner with Indigenous and coastal communities to develop a world-leading marine safety system that meets the unique needs of Canada from coast-to-coast-to-coast.

All Canadians, and especially coastal communities, need confidence that commercial shipping is taking place in a way that is safe for mariners and that protects and sustains the economic, environmental, social, and cultural health of our oceans and coasts.

Canada will invest \$1.5 billion over five years in long-needed coastal protections, with an action plan to deliver results for the coming decade.

This Plan will engage communities, first responders, and governing authorities to work together effectively to respond to emergencies.

### World-leading marine safety system

The national Oceans Protection Plan is designed to achieve a world-leading marine safety system for our country's unique context that will increase the Government of Canada's capacity to prevent and improve response to marine pollution incidents.

### Better information sharing of marine traffic with coastal communities

#### *Real-time awareness of marine traffic in Canadian waters*

Indigenous and coastal communities expect that more local data on marine traffic (who is doing what and where) will be shared in a user-friendly way that meets their needs.

**Pages 161 to / à 170  
are withheld pursuant to section  
sont retenues en vertu de l'article**

**68(a)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

# Appendix 3

## Conditions applied to legal instruments

In these conditions, the following terms are defined as:

<b>Appropriate Government Authorities</b>	Federal, Provincial, Regional or Municipal government departments or agencies with jurisdiction, statutory obligations, regulatory oversight or a decision-making role in relation to the subject-matter of the specific condition. For location-specific conditions or phased filings, this is limited to those with such a role in relation to the geographic location to which the condition filing applies. (Aboriginal groups are treated separately and listed separately in each applicable condition.)
<b>Commencing operations</b>	The Project is opened for oil storage and transmission. Unless otherwise specified, "prior to commencing operations" means an action must be completed prior to commencing operation of any component of the Project, and "after commencing operations" means an action must be completed after all components of the Project are operating.
<b>Construction</b>	Any in-field activity that may have an effect on the environment and that is necessary for installing, deactivating, reactivating <sup>83</sup> or decommissioning, or preparing to install, deactivate, reactivate <sup>83</sup> or decommission, any component of the Project. Construction activities include, clearing, mowing, grading, trenching, drilling, boring, and blasting. Construction activities do not include activities associated with routine surveying operations or data collection activities, such as geotechnical investigations (e.g., geophysical surveys, bore holes, and test pits), activities required to obtain integrity information on the reactivation pipeline segments, or operations and maintenance activities (to which NEB "Operations and Maintenance Activities on Pipelines under the National Energy Board Act – Requirements and Guidance Notes" apply). Construction at the Westridge Marine Terminal also includes construction activities occurring in the marine environment that are necessary for installing, or preparing to install, any component of the Westridge Marine Terminal expansion. This includes dredging, blasting, and pile drilling.
<b>Consultation</b>	Unless otherwise specified in a condition, Trans Mountain's consultation must be carried out in a manner that: a) provides, to those to be consulted: i) notice of the matter in sufficient form and detail to allow them to prepare their views or information on the matter; ii) a reasonable period for them to prepare those views or information; and iii) an opportunity to present those views or information to Trans Mountain; and b) considers, fully and impartially, the views or information presented; c) provides, to those in a) who request it, a draft summary of the consultation undertaken with that party, and a reasonable period for them to provide feedback to Trans Mountain; and d) provides, to those in a) who request it, a copy of the NEB filing receipt for, or notice of, the condition filing to which the consultation pertained.

<sup>83</sup> Excluding engineering assessment and operations and maintenance activities required to meet Conditions 19 and 31.

**Pages 172 to / à 252  
are withheld pursuant to section  
sont retenues en vertu de l'article**

**68(a)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

# **TRANS MOUNTAIN EXPANSION PROJECT**

## **SCHEDULE B**

### **TABLE OF CONDITIONS FOR AN ENVIRONMENTAL ASSESSMENT CERTIFICATE**

**Pages 254 to / à 276  
are withheld pursuant to section  
sont retenues en vertu de l'article**

**68(a)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**



## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
18	Aboriginal Engagement	Adams Lake Indian Band; Ermineskin Cree Nation; Kelly Lake Cree Nation; Kwantlen First Nation; O'Chiese First Nation; Samson Cree Nation; Sucker Creek First Nation; Whitefish (Goodfish) Lake First Nation #128	Trans Mountain will continue to engage Aboriginal communities through all phases of the Project. Site-specific information identified by Aboriginal groups will be reviewed.	ALIB IR No._1.6.03, Kwantlen_FN_IR_No._1.01.7, Nations_IR_No._1.1.7B, Nations_IR_No._1.1.7h, O'Chiese_FN_IR_No._1.04.3	6 - Project Lifecycle	Superseded by NEB Condition	96	
183	Aboriginal Engagement	Simpow First Nation	Trans Mountain will review the preliminary plot plans for the proposed new pump stations with the Simpcw First Nation, upon their request, when the plot plans are available, anticipated by the end of 2014.	Simpcw_F_N_IR_No._1.047b	1 - Prior to Construction	Superseded by NEB Condition	96	
397	Aboriginal Engagement	Province of British Columbia	With respect to marine-based emergency preparedness and response, Trans Mountain is prepared to make an investment, and is discussing same directly with First Nations. Trans Mountain is interested in better understanding how the authorities and governments responsible for marine spill prevention and emergency preparedness related activities will participate.	Province_BC_IR_No._1.1.22d	Construction	Superseded by BC EAO	10	
443	Aboriginal Engagement	NEB	All Aboriginal Groups that expressed an interest or concern will be contacted 3 months prior to clearing work start to discuss how an opportunity could be developed for Salvageable timber in their territory.	NEB_IR_No._2.011c	1 - Prior to Construction	In Progress		
551	Aboriginal Engagement	Environment Canada	Trans Mountain will work with potentially affected local Aboriginal and Metis communities identified by Parks Canada.	GOC_Parks_IR_No._2_141	6 - Project Lifecycle	Superseded by NEB Condition	72	
600	Aboriginal Engagement	Adams Lake Indian Band	Trans Mountain commits to further engagement with the Adams Lake Indian Band (ALIB) in regard to the plans, programs, initiatives and timelines outlined in ALIB IR No. 2.06.5a.	ALIB_IR_No._2.06.5b	6 - Project Lifecycle	In Progress		
697	Aboriginal Engagement	Horse Lake First Nation	Trans Mountain is committed to continued engagement with Aboriginal groups that are directly impacted and are interested in providing traditional knowledge as it relates to the location and construction of the Trans Mountain Expansion Project and will continue to discuss proposed mitigation and enhancement measures.	Horse_Lake_FN_IR_No._2.1b (PDF page 2), Horse_Lake_FN_IR_No._2.3a (PDF page 8)	1 - Prior to Construction	Superseded by NEB Condition	72	
698	Aboriginal Engagement	Horse Lake First Nation	Trans Mountain will notify Horse Lake First Nation of the construction schedule in the vicinity of their community two weeks prior to the start of construction.	Horse_Lake_FN_IR_No._2.3d	Prior to Construction	Scoping		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
743	Aboriginal Engagement	Sto:lo Collective	Trans Mountain commits to working in partnership with Sto:lo Collective to develop a mutually acceptable plan to discuss the 89 recommendations in the Integrated Cultural Assessment (ICA).	Sto:lo Collective_IR_No._1.1a	1 - Prior to Construction	In Progress		
795	Aboriginal Engagement	Sto:lo Collective	Commit to working with Sto:lo Collective to develop a plan to discuss future consultation communications and notifications pertaining to the areas of interest outlined in the Integrated Cultural Assessment (ICA).	Sto:lo Collective_IR_No._1.2e	1 - Prior to Construction	In Progress		
854	Aboriginal Engagement	Sk'elepsemic Te Secwepemc	Trans Mountain will consult with the Sk'elepsemic Te Secwepemc (SSN) on access control measures within the SSN territory.	SSN_IR_No._2.32.1	1 - Prior to Construction	In Progress		
874	Aboriginal Engagement	Cheam First Nation and Chawathil First Nation	Workshops focused on the Environmental Protection Plan (EPP) and Emergency Response Plan (ERP) are tentatively scheduled to take place along the proposed Project right of way, starting in Q2; Cheam and Chawathil will be invited to attend both workshops.	Cheam and Chawathil IR_No._2(b).2.1.d	1 - Prior to Construction	Complete		Environmental Protection Plan (EPP) and Emergency Response Plan (ERP) workshops were held in September 2015. Chawathil First Nation attended the workshop in Abbotsford. An EPP meeting was held with Cheam First Nation on February 3, 2016.
896	Aboriginal Engagement	Sto:lo Collective	Trans Mountain is committed to working in partnership with the Sto:lo Collective to develop a series of workshops to discuss questions and address concerns. The workshop series will be confirmed in Q1, 2015.	Sto:lo Collective Recommendation #2	1 - Prior to Construction	In Progress		
937	Aboriginal Engagement	Tsawout First Nation	Trans Mountain will continue to engage Tsawout First Nation through all phases of the Project. Traditional resource use information received from Tsawout First Nation will be reviewed in order to confirm literature results and mitigation measures, including those found in the Environmental Protection Plans. Any additional site-specific mitigation measures resulting from these studies will be provided in the updated Environmental Protection Plans.	Tsawout_FN_IR_No._2.5.6a	6 - Project Lifecycle	In Progress		
938	Aboriginal Engagement	Tsawout First Nation	Trans Mountain is prepared to meet with the Tsawout First Nation following receipt of its Traditional Marine Resource Use (TRMU) to review the findings of the report. Trans Mountain is willing to review and incorporate any appropriate mitigation measures into the updated Environmental protection plans that have not already been captured.	Tsawout_FN_IR_No._2.65d	1 - Prior to Construction	In Progress		
1,006	Aboriginal Engagement	Sto:lo Collective	Trans Mountain commits to continue engagement with the members of the Sto:lo Collective to identify traffic mitigation measures related to construction of the TMEP.	August 11, 2014 Letter from Sto:lo Collective to Trans Mountain	1 - Prior to Construction	In Progress		

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
1,585	Aboriginal Engagement	Sto:lo Collective	Trans Mountain will file a Supplemental Traditional Land and Resource Use Technical Report, including a list of issues raised by Sto:lo Collective and responses from Trans Mountain.	Sto:lo Collective Attachment - Table 2b	1 - Prior to Construction	Complete		Supplemental Traditional Land and Resource Use (TLRU) Technical Report (TDR) in Section 4.4.4 [Filing ID: A3742] includes a table of issues and concerns raised by Sto:lo collective and Trans Mountain's response to these issues.
1,611	Aboriginal Engagement	Sto:lo Collective	Trans Mountain is committed to hosting a series of workshops, as agreed upon by Trans Mountain and Sto:lo representatives for communities represented by the Sto:lo Collective.	Sto:lo Collective Recommendation #2, #5, #12, #15, #16, #23, #24, #25, #28, #30, #31, #32, #36, #42, #46, #47, #48, #55, #60, #62, #64, #77	1 - Prior to Construction	In Progress		
1,613	Aboriginal Engagement	Sto:lo Collective	In partnership with Sto:lo representatives, Trans Mountain commits to developing a mutually agreeable process for continued engagement.	Sto:lo Collective Recommendation #4, #64	1 - Prior to Construction	In Progress		
1,623	Aboriginal Engagement	Sto:lo Collective	Trans Mountain commits to discussing with Sto:lo funding for improvements to access and infrastructure in support of fishing as determined by Sto:lo representatives.	Sto:lo Collective Recommendation #22	1 - Prior to Construction	In Progress		
1,624	Aboriginal Engagement	Sto:lo Collective	Trans Mountain will discuss funding for additional vegetation studies with the Sto:lo representatives.	Sto:lo Collective Recommendation #23, #7, #62	1 - Prior to Construction	In Progress		
1,633	Aboriginal Engagement	Sto:lo Collective	Trans Mountain is open to discussing a Sto:lo-specific construction communication plan or a community liaison.	Sto:lo Collective Recommendation #44	1 - Prior to Construction	In Progress		
1,639	Aboriginal Engagement	Sto:lo Collective	Trans Mountain welcomes the opportunity to discuss funding for cultural programs and events.	Sto:lo Collective Recommendation #5, #8, #39	1 - Prior to Construction	In Progress		
1,643	Aboriginal Engagement	Sto:lo Collective	Trans Mountain is committed to working with Sto:lo representatives to minimize scheduling conflicts and requests that key dates are provided to Trans Mountain six months prior to construction for the inclusion in final construction planning.	Sto:lo Collective Recommendation #85	1 - Prior to Construction	In Progress		
1,656	Aboriginal Engagement	Sto:lo Collective	Trans Mountain is committed to continued engagement with Sto:lo representatives to discuss funding opportunities related to policing.	Sto:lo Collective Recommendation #83	1 - Prior to Construction	In Progress		

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
1,660	Aboriginal Engagement	Sto:lo Collective	90 days prior to the start of construction, Trans Mountain will provide copies of: 1. Schedule of construction activities within S'ólh Téméxw 2. Environmental Alignment Sheets; and, 3. Plan, Profile and Book or Reference that defines the construction footprint.	Sto:lo Collective Recommendation #88	1 - Prior to Construction	In Progress		
1,661	Aboriginal Engagement	Sto:lo Collective	Trans Mountain welcomes the opportunity to discuss the establishment of a scholarship program for Sto:lo students.	Sto:lo Collective Recommendation #89	1 - Prior to Construction	In Progress		
2,149	Aboriginal Engagement	NEB	Trans Mountain intends to file Consultation Update #3, including a summary of all consultation activities between May 1, 2014 and October 31, 2014 in Q4 2014 or Q1 2015.	NEB_IR_No._2.009a	1 - Prior to Construction	Complete		
2,899	Aboriginal Engagement	NEB	Trans Mountain is committed to provide any further engagement log updates and future information requests (IR's) for any First Nation on Vancouver Fraser Port Authority DSA Port Metro Vancouver (PMV) list [First Nations with traditional territories that intersect the specific project area where the proposed Westridge Terminal enhancements/in water works will be located and, First Nations with traditional territories that intersect the navigational route within PMV jurisdiction].	Consultation Update No. 3 - Part 1, Table A-22, NEB_IR_No._3.005a-Attachment_1-Part_2	6 - Project Lifecycle	In Progress		
3,208	Aboriginal Engagement	Sto:lo Collective	Trans Mountain will file a Supplemental Traditional Land and Resource Use Technical Report, including a list of issues raised by Sto:lo Collective and responses from Trans Mountain.	Sto:lo Collective Attachment - Table 2d	1 - Prior to Construction	Complete		
3,209	Aboriginal Engagement	Sto:lo Collective	Trans Mountain will file a Supplemental Traditional Land and Resource Use Technical Report, including a list of issues raised by Sto:lo Collective and responses from Trans Mountain.	Sto:lo Collective Attachment - Table 2d	1 - Prior to Construction	Complete		
3,213	Aboriginal Engagement	Horse Lake First Nation	Trans Mountain will notify Horse Lake First Nation of the construction schedule in the vicinity of their community two weeks prior to the start of construction.	Horse_Lake_FN_IR_No._2.3d	1 - Prior to Construction	Scoping		
3,214	Aboriginal Engagement	Horse Lake First Nation	Trans Mountain will notify Horse Lake First Nation of the construction schedule in the vicinity of their community two weeks prior to the start of construction.	Horse_Lake_FN_IR_No._2.3d	1 - Prior to Construction	Scoping		
3,227	Aboriginal Engagement	Simpow First Nation	Trans Mountain will review the preliminary plot plans for the proposed new pump stations with the Simpow First Nation, upon their request, when the plot plans are available, anticipated by the end of 2014.	SIMPW_F_N_IR_No._1.047b	1 - Prior to Construction	In Progress		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (#) Number	Additional Comments
3,570	Aboriginal Engagement	Sto:lo Collective	In addition to an agreement between Sto:lo and Trans Mountain to create a Project-specific economic development strategy, Trans Mountain will engage directly with Sto:lo representatives during each Aboriginal, local and regional business opportunities monitoring cycle. Trans Mountain will develop a summary of business opportunities (based on the monitoring indicators) specific to the Sto:lo communities. Trans Mountain will discuss each Sto:lo-specific Aboriginal, local and regional business opportunity monitoring outcome with Sto:lo representatives, as part of the mutually agreed upon engagement strategy, and identify any new opportunities to further enhance business opportunities for Sto:lo members.	Sto:lo Collective Recommendation #70, local and #67	1 - Prior to Construction	In Progress		
3,571	Aboriginal Engagement	Sto:lo Collective	In addition to an agreement between Sto:lo and Trans Mountain to create a Project-specific economic development strategy, Trans Mountain will engage directly with Sto:lo representatives during each Aboriginal, local and regional business opportunities monitoring cycle. Trans Mountain will develop a summary of business opportunities (based on the monitoring indicators) specific to the Sto:lo communities. Trans Mountain will discuss each Sto:lo-specific Aboriginal, local and regional business opportunity monitoring outcome with Sto:lo representatives, as part of the mutually agreed upon engagement strategy, and identify any new opportunities to further enhance business opportunities for Sto:lo members.	Sto:lo Collective Recommendation #70, local and #67	1 - Prior to Construction	In Progress	Superseded by NEB Condition #112	
3,582	Aboriginal Engagement	Sto:lo Collective	In addition to an agreement between Sto:lo and Trans Mountain to create a Project-specific economic development strategy, "Trans Mountain will engage directly with Sto:lo representatives during each Aboriginal, local and regional business opportunities monitoring cycle. Trans Mountain will develop a summary of business opportunities (based on the monitoring indicators) specific to the Sto:lo communities. Trans Mountain will discuss each Sto:lo-specific Aboriginal, local and regional business opportunity monitoring outcome with Sto:lo representatives, as part of the mutually agreed upon engagement strategy, and identify any new opportunities to further enhance business opportunities for Sto:lo members.	Sto:lo Collective Recommendation #70, local and #67	1 - Prior to Construction	In Progress		

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (K) Number	Additional Comments
3,583	Aboriginal Engagement	Sto:lo Collective	In addition to an agreement between Sto:lo and Trans Mountain to create a Project-specific economic development strategy, Trans Mountain will engage directly with Sto:lo representatives during each Aboriginal, local and #67 regional business opportunities monitoring cycle. Trans Mountain will develop a summary of business opportunities (based on the monitoring indicators) specific to the Sto:lo communities. Trans Mountain will discuss each Sto:lo-specific Aboriginal, local and regional business opportunity monitoring outcome with Sto:lo representatives, as part of the mutually agreed upon engagement strategy, and identify any new opportunities to further enhance business opportunities for Sto:lo members.	Sto:lo Collective Recommendation #70.	1. Prior to Construction	In Progress		
3,849	Aboriginal Engagement	NEB	Trans Mountain is committed to provide any further engagement log updates and future information requests (IR's) for any First Nation on Vancouver Fraser Port Authority DBA Port Metro Vancouver (PMV) list [First Nations with traditional territories that intersect the specific project area where the proposed Westridge Terminal enhancements/in water works will be located and, First Nations with traditional territories that intersect the navigational route within PMV jurisdiction].	Consultation Update No. 3 - Part 1, Table 1.22, NEB_IR_No._3.005a-Attachment_1-Part_2	1. Prior to Construction	In Progress		
118	Commercial	City of Burnaby	Trans Mountain is committed to a Community Benefits program and these positive legacies are in addition to any increase in property taxes, employment, procurement opportunities, and workforce spending that might arise from the proposed Project.	City_Burnaby_IR_No._6-Project Lifecycle 1.44.01i	6 - Project Lifecycle	Superseded by NEB Condition	7	
482	Commercial	NEB	Trans Mountain will continue to develop and implement an Environmental Stewardship program as part of the Trans Mountain Expansion Project. Trans Mountain will negotiate Memoranda of Understanding (MOU) with key stakeholders in each community that could be involved in the Environmental Stewardship Program.	NEB_IR_No._3.036a	1 - Prior to Construction	Superseded by NEB Condition	145	
483	Commercial	NEB	Trans Mountain will continue to develop and implement its Community Benefits Program as detailed in the Application and in the response to NEB IR_3.036a. Trans Mountain has and will continue to negotiate Memoranda of Understanding (MOU) with key stakeholders in each community that will be involved in the Community Benefits Program for the Project.	NEB_IR_No._3.036b	6 - Project Lifecycle	Superseded by NEB Condition	145	
81	Corporate	Robyn Allan	Trans Mountain Pipeline L.P. will pay the expenses related to the debt financing for the Trans Mountain Expansion Project.	Allan_R_IR_No._1.06_hh	6 - Project Lifecycle	Superseded by Management Plan		

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
85	Corporate	NEB	Trans Mountain will have in place a stand-alone liability policy to cover liabilities that may arise as a result of the construction activities undertaken by the Project. Third-party contractors involved in the construction of the Project will also be required to maintain their own separate insurance coverage.	NEB_IR_No._1.8a	1 - Prior to Construction	Superseded by Management Plan		
838	Corporate	Corporation of the City of Victoria	Trans Mountain commits to consult with coastal communities on a community benefits program focused on marine spill response.	City_of_Victoria_No._... 2.2	3 - Prior to Operations	Complete		
865	Corporate	Squamish Nation	Trans Mountain will commit to paying all claims for which it is legally responsible; this could be the case for a land-based spill from a pipeline or marine terminal incident if oil spill impacts occurred within Squamish territory.	Squamish_Nation_IR_No._2.15.c	6 - Project Lifecycle	Superseded by Legal/Regulatory Requirement		
871	Corporate	Cheam First Nation and Chawathil First Nation:#46	Trans Mountain is committed to responding respectfully to and making all reasonable efforts to achieve cooperative settlements on all claims contemplated within the NEB Act and our land tenure contracts.	FN_IR_No._2(b).3.3.b	6 - Project Lifecycle	Superseded by Legal/Regulatory Requirement		
87	Emergency Management	City of Burnaby	Trans Mountain will file the emergency management plan documents for the existing system on August 1, 2014 along with a request, pursuant to the Filing Manual, that the NEB treat them confidentially.	City_Burnaby 1.07.11.cj	1 - Prior to Construction	Complete		
97	Emergency Management	NEB; New Democratic Party of Canada	Trans Mountain has agreed to participate and support the Scientific Advisory Committee process and is working with the Canadian Energy Pipeline Association (CEPA) and the Canadian Association of Petroleum Producers (CAPP).	NEB_IR_No._1.63a, NEB_IR_No._1.63b, NDP_IR_No._1.15f	3 - Prior to Operations	Superseded by NEB Condition	124	
98	Emergency Management	Province of British Columbia	As part of the Project, Trans Mountain will undertake a risk assessment and gap analysis to determine the need for additional Oil Spill Containment and Recovery (OSCAR) units and the most effective location for placement of the additional OSCARs.	Province_BC_IR_No._1 1.22a	3 - Prior to Operations	Superseded by EAO		
101	Emergency Management	Simon Fraser University	Kinder Morgan Canada (KMC) acknowledges Simon Fraser University's (SFU's) interests and concerns about consultation opportunities for the updated Emergency Management Program (EMP) for the Trans Mountain Expansion Project and will invite SFU to participate in the process such as KMC emergency management program	SFU_IR_No._2.6.8	3 - Prior to Operations	Superseded by NEB Condition	90,117	Through workshops and 1 on 1 meetings TMEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMEP's Consultation Plan (NEB C-90), and would be reporting the results as per NEB C-117.
104	Emergency Management	NEB	Trans Mountain will establish control points for the new and proposed pipeline and conduct a regular review once in operation.	NEB_IR_No._1.73a, NEB_IR_No._1.73b	3 - Prior to Operations	Superseded by NEB Condition	125	As part of the completion of NEB C-125 and BC EAQ C-33, KMC is assessing and implementing existing and new Control Points, which will result in a documented inventory of Control Points.

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (k) Number	Additional Comments
105	Emergency Management	NEB	TMEP will maintain its Community Awareness and Emergency Response (CAER) program and include the Trans Mountain Expansion Project.	Part 2 – Consultation Update No. 1	4 - Operations	Superseded by Management Plan		KMC's Emergency Management Program outlines all liaison and continuing education activities as per sections 33 and 35 of the Onshore Pipelines Regulations, including Community Awareness and Emergency Response (CAER).
106	Emergency Management	NEB	Trans Mountain will be part of a forthcoming collaborative mutual aid protocol between members of the energy pipeline industry, spearheaded by the Canadian Energy Pipeline Association, to support each other's emergency response efforts as needed.	Application Volume 5B, s 5, 5-162	3 - Prior to Operations	Complete		On 2014-01-01, Canadian Energy Pipeline Association (CEPA) Mutual Emergency Assistance Agreement (MEA) was signed by all CEPA company members.
111	Emergency Management	City of Abbotsford	Trans Mountain will consult with the City of Abbotsford and its first responders in Emergency Management planning.	City_of_Abbotsford_IR_No._1.08a	3 - Prior to Operations	Superseded by NEB Condition	90, 117	Through workshops and 1 on 1 meetings TMEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMEP's Consultation Plan (NEB C-90), and would be reporting the results as per NEB C-117.
112	Emergency Management	District of North Vancouver	KMC is committed to engaging with the District of North Vancouver on the notification process regarding an unlikely event of a release.	District_of_North_Vancouver_IR_No._2.02.0	4 - Operations	Superseded by Management Plan		Notifications to municipalities impacted by a release is a process included in the Emergency Response Plans. Furthermore, liaison roles and responsibilities with Third Parties are outlined in KMC's 2016 Incident Command System Guide.
255	Emergency Management	Squamish Nation	In the event of a spill that were to impact Squamish land Trans Mountain will commit to meet with Squamish to understand the remediation concerns and interests, and work to resolve any issues that are not resolved in the initial clean up.	Squamish_Nation_IR_No._2.04(h)	4 - Operations	Superseded by Management Plan		In the event of an incident, KMC Emergency Response Plans and ICS guide identifies procedures for working and addressing environmental concerns.
471	Emergency Management	NEB	KMC remains committed to participating through its membership in Canadian Energy Pipeline Association (CEPA) in the Province's Land Base Spill Response initiative.	NEB_IR_No._3.023a	4 - Operations	In Progress		KMC is participating in BC Land Base Spill Response working groups and participates in the industry formed BC provincial coordination organization (PCO). KMC is also supporting the BC Land Base spill response through its membership in CEPA.
532	Emergency Management	NEB	Trans Mountain commits to engaging with local emergency responders near the Edmonton terminal to ensure that they are aware of all of the available fire-protection systems and procedures prior to the commencement of operations.	NEB_IR_No.4_28c	3 - Prior to Operations	Superseded by NEB Condition	90, 117	Through workshops and 1 on 1 meetings TMEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMEP's Consultation Plan (NEB C-90), and would be reporting the results as per NEB C-117.
559	Emergency Management	Art Jackson O/A Alpine Art	KMC will be developing Geographic Response Plans (GRPs) for all the areas transited by its expanded pipeline system.	Alpine_ART_IR_No._2.5	3 - Prior to Operations	Superseded by NEB Condition	125	As part of the completion of NEB C-125 and BC FAO C-33, Geographical Response Plans will be developed.
569	Emergency Management	Burnaby Teachers' Association	Trans Mountain commits to working with individual schools or School Districts to fully support their safety efforts and ensure their Emergency Response Plans are coordinated with KMC's.	BTA_IR_No._2.7	3 - Prior to Operations	Superseded by NEB Condition	90, 117	Through 1 on 1 meetings TMEP has engaged the Burnaby School District and developed and provided a specific "School ERP supplement" for all the schools identified near the TMPL.

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (K) Number	Additional Comments
583	Emergency Management	City of Abbotsford	KMC confirms that an analysis is currently underway and that work to date will result in an Oil Spill Containment and Recovery (OSCAR) unit being staged within the City of Abbotsford at the Sumas Pump Station beginning in the summer of 2015.	City_of_Abbotsford_IR_No._2.3.07a	4 - Operations	Complete		Q3 2015; An Oil Spill Containment and Recovery (OSCAR) unit was relocated at the Sumas Pump Station. Equipment location is assessed yearly as part of the planning standard review.
587	Emergency Management	City of Abbotsford	Trans Mountain commits to continued engagement with the City of Abbotsford on enhancements to the Emergency Management Program (EMP).	City_of_Abbotsford_IR_No._2.2.01.a)	3 - Prior to Operations	Superseded by NEB Condition	90, 117	Through workshops and 1 on 1 meetings TMFEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMFEP's Consultation Plan (NEB C-90), and would be reporting the results as per NEB C-117.
608	Emergency Management	City of Burnaby	KMC will consider risk sensitive monitoring and proximity audible warning systems as a possible option in the course of its development of the enhanced Emergency Management plan (EMP).	City_Burnaby_IR_No._2.024	3 - Prior to Operations	Superseded by NEB Condition	123, 125, 126	As a requirement for NEB C-123, notification processes will be reviewed and discussed with authorities with jurisdiction to initiate public safety measures, and be the results documented as per NEB C-123.
657	Emergency Management	City of Kamloops	Trans Mountain will consult with the City of Kamloops and its first responders in Emergency Management planning.	City_of_Kamloops_IR_No._2.12	3 - Prior to Operations	Superseded by NEB Condition	90, 117	Through workshops and 1 on 1 meetings TMFEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMFEP's Consultation Plan (NEB C-90), and would be reporting the results as per NEB C-117.
667	Emergency Management	City of New Westminster	Trans Mountain will consult with the City of New Westminster and its first responders in Emergency Management planning.	City_New_Westminster_IR_No._2.D.1	3 - Prior to Operations	Superseded by NEB Condition	90, 117	Through workshops and 1 on 1 meetings TMFEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMFEP's Consultation Plan (NEB C-90), and would be reporting the results as per NEB C-117.
673	Emergency Management	City of North Vancouver	Trans Mountain will consult with the City of North Vancouver and its first responders in Emergency Management planning.	City_North_Vancouver_IR_No._2.2.4	3 - Prior to Operations	Superseded by NEB Condition	90, 117	Through workshops and 1 on 1 meetings TMFEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMFEP's Consultation Plan (NEB C-90), and would be reporting the results as per NEB C-117.
680	Emergency Management	City of Port Moody	Trans Mountain will commit to engaging with Port Moody in the review of the Westridge Emergency Response plan.	City_of_Port_Moody_R_No._2.3.28	3 - Prior to Operations	Superseded by NEB Condition	90, 117	Through workshops and 1 on 1 meetings TMFEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMFEP's Consultation Plan (NEB C-90), and would be reporting the results as per NEB C-117.
686	Emergency Management	Metis Nation of Alberta Gunn Metis Local 55	Geographic Response Plans (GRPs) will be developed and ready for application, to any spills that may potentially occur, prior to the expanded pipeline system beginning operations.	Gunn_Metis_Local_55_R_No._2.18	3 - Prior to Operations	Superseded by NEB Condition	125	As part of the completion of NEB C-125 and BC EAQ C-33, Geographical Response Plans are being developed.

## Trans Mountain Expansion Project

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 Commitment Tracking Table (Condition 6)  
 July 14, 2017

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
734	Emergency Management	City of Richmond	Trans Mountain will consult with the City of Richmond and its first responders in Emergency Management planning.	City_of_Richmond_IR_No._2.2.12	3 - Prior to Operations	Superseded by NEB Condition	90, 117	Through workshops and 1 on 1 meetings and exercise attendance TMEP has consulted as described in NEB C-90 and will continue to engage parties as describe in TMEP's Consultation plan (NEB C-90), and would be reporting the results as per NEB C-117.
736	Emergency Management	City of Richmond	As part of enhancing its Emergency Management Program prior to operation of the expanded pipeline system, Trans Mountain will be reviewing and augmenting its inventory of control points.	City_of_Richmond_IR_No._2.2.15	3 - Prior to Operations	Superseded by NEB Condition	125	As part of the completion of NEB C-125 and BC EAO C-33, KMC is assessing and implementing existing and new Control Points, which will result in a documented inventory of Control Points.
746	Emergency Management	City of Vancouver	Trans Mountain will invite the Vancouver Coastal Health Authority and the Fraser Valley Health Authority to participate in Emergency Management Planning.	City_of_Vancouver_IR_No._2.04.03	3 - Prior to Operations	Superseded by NEB Condition	90, 117	Through workshops and 1 on 1 meetings TMEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMEP's Consultation plan (NEB C-90), and would be reporting the results as per NEB C-117.
747	Emergency Management	City of Vancouver	KMC will incorporate wording into the current Emergency Management Program (EMP) documents for Westridge Marine Terminal during the 2015 annual update of the Emergency Response Plan (ERP) to ensure clarity around response actions during a fire event specific to the terminal based on the recommendations in the Emergency response Guidebook (ERG) 2012.	City_of_Vancouver_IR_No._2.04.06.a	3 - Prior to Operations	In Progress		The Westridge Marine Terminal Emergency Response Plan will be updated in 2017 to reference the Emergency Response Guidebook - 2016 (newest version). Westridge Marine terminal fire plans detail the response actions to be taken during a fire event at the Marine terminal.
757	Emergency Management	Katzie First Nation	Affected Aboriginal groups will be invited to participate in Unified Command in the event of an incident.	Katzie_FN_IR_No._2.2_4 - Operations .12a		Complete		2016 KMC Guide Section 6.4 includes directions that in the event of a multi-jurisdictional incident, Unified Command will be struck and impacted First Nations will be invited to be a member of the Unified Command.
772	Emergency Management	Province of British Columbia	Trans Mountain will consult with the Province of BC in Emergency Management planning.	Province_BC_IR_No._2 .21	3 - Prior to Operations	Superseded by NEB Condition	90, 117	Through workshops and 1 on 1 meetings TMEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMEP's Consultation plan (NEB C-90), and would be reporting the results as per NEB C-117.
774	Emergency Management	Province of British Columbia	As part of the Emergency Management Program (EMP) review KMC will review information regarding shelter-in-place to ensure suitable messaging is incorporated into responses plans and public awareness materials.	Province_BC_IR_No._2 .31g	3 - Prior to Operations	Superseded by NEB Condition	123, 124, 125	The planning process required for NEB C-123 and C-125, will include the review of public safety messaging and the appropriate updates to response plans and public awareness materials.

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
775	Emergency Management	Province of British Columbia	For areas that may potentially be affected by an oil spill from Trans Mountain along the Fraser and North Thompson Rivers Trans Mountain will: <ul style="list-style-type: none"> <li>• identify and map side channels that could be used in containment and recovery of oil.</li> <li>• consider access to these side channels and include access details in its Emergency Management Plan (EMP) documents, and</li> <li>• identify available boat launches on these side channels and the spill response equipment in their vicinity.</li> </ul>	Province_IR_No._2 .32	3 - Prior to Operations	Superseded by NEB Condition	125	As part of the completion of NEB C-125 and BC EAO C-33, Geographical Response Plans will be developed.
776	Emergency Management	Wembly Estates Strata Council#288	Kinder Morgan Canada Inc. (KMC) is committed to ensuring a prompt and immediate response to any fire event that involves Trans Mountain Pipeline or Facilities to protect the public, employees, environment, and property.	Wembly_Estates_IR_No._2f	3 - Prior to Operations	Superseded by NEB Condition	125	As part of the completion of NEB C-127, KMC will demonstrate the adequacy of the fire protection and firefighting systems at the Burnaby Terminal, and the Westridge Marine Terminal.
778	Emergency Management	Tsleil-Waututh Nation	KMC acknowledges the Tsleil-Waututh Nation's interests and concerns with regard to the updated Emergency Management Program (EMP) for the Trans Mountain Expansion Project (the Project) and will invite the Tsleil-Waututh Nation to participate in the process described above.	Tsleil-Waututh_Nation_IR_N_0...2.1a	3 - Prior to Operations	Superseded by NEB Condition	90, 117	Through workshops and 1 on 1 meetings TMEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMEP's Consultation Plan (NEB C-90), and would be reporting the results as per NEB C-117.
781	Emergency Management	Province of British Columbia	The current Emergency Management Programs will be updated to reflect the new program name and description of the Regional Environmental Emergencies Team (REET) in the spring of 2015.	Province_IR_No._2 .43	1 - Prior to Construction	Complete		Trans Mountain Emergency Response Plan 2016 version is currently published on TM web site. The ERP reflects the Regional Environmental Emergencies Team (REET) new program name and description.
782	Emergency Management	Province of British Columbia	Trans Mountain has evaluated and completed pre-spill SCAT (shoreline characterization) surveys applicable to a potential spill at the Westridge Marine Terminal (WMT) and will be evaluating the surveys and activities as part of the enhanced emergency management review.	Province_IR_No._2 .48a	3 - Prior to Operations	Complete		Pre SCAT surveys have been completed in 2015 for areas of the Burrard Inlet applicable to a potential spill from the Westridge Marine Terminal (WMT). Results have been shared with the Certified Response Organisation.
816	Emergency Management	Fraser Valley Regional District	Trans Mountain will conduct a consultation program as part of developing the updated Emergency Management Plan (EMP) as described in the NEB draft conditions related to emergency management.	FVRD_IR_No._2.02	3 - Prior to Operations	Superseded by NEB Condition	90, 117	Through workshops and 1 on 1 meetings TMEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMEP's Consultation plan (NEB C-90), and would be reporting the results as per NEB C-117.
817	Emergency Management	NEB	Trans Mountain commits to engaging with local emergency responders near the Edmonton Terminal to ensure that they are aware of all of the available fire-protection systems and procedures prior to the commencement of operations.	NEB_IR_No._4_28C	3 - Prior to Operations	Superseded by NEB Condition	90, 117	Through workshops and 1 on 1 meetings TMEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMEP's Consultation plan (NEB C-90), and would be reporting the results as per NEB C-117.

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Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
864	Emergency Management	Squamish Nation	In the event that a pipeline release somehow adversely impacted drinking water aquifer conditions that supply Squamish Nation, Trans Mountain will commit to working with the leadership of the Nation to identify surplus capacity from other drinking water sources in the area, while suitable replacement alternatives were established and implemented.	Squamish Nation _IR_No._2.2.12j	4 - Operations	Superseded by Management Plan		In the event of an incident, KMC Emergency Response Plans and ICS guide identifies procedures for working and addressing environmental concerns.
869	Emergency Management	Cheam First Nation and Chawathil First Nation	Trans Mountain will consult with First Nations in the development of enhanced Emergency Response Plans (ERPs) for the expanded pipeline system. Trans Mountain is in the planning stages for a workshop series. The series is expected to commence in Q2 2015 and first Nations with an interest in the project or Aboriginal interests potentially affected by the project will be invited to attend.	Cheam_and_Chawathil_I FN _IR_No._2(b).1.2.c.b.a	3 - Prior to Operations	Superseded by NEB Condition	90,117	Through workshops and 1 on 1 meetings TMEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMEP's Consultation Plan (NEB C-90), and would be reporting the results as per NEB C-117.
898	Emergency Management	Tsleil-Waututh Nation	Trans Mountain will consult with the Tsleil-Waututh Nation in Emergency Management planning.	Tsleil-Waututh_Nation_IR_No._2.3.1a	3 - Prior to Operations	Superseded by NEB Condition	90,117	Through workshops and 1 on 1 meetings TMEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMEP's Consultation Plan (NEB C-90), and would be reporting the results as per NEB C-117.
901	Emergency Management	Wembly Estates Strata Council	KMC will consider risk sensitive monitoring and proximity audible warning systems as a possible option in the course of its development of the enhanced Emergency Management Program.	Wembly_Estates_IR_No._2.2g	3 - Prior to Operations	Superseded by NEB Condition	123	As a requirement for NEB C-123, notification processes will be reviewed and discussed with authorities with jurisdiction to initiate public safety measures, and be the results documented as per NEB C-123.
921	Emergency Management	Simon Fraser University	Trans Mountain will consult with Simon Fraser University in Emergency Management planning.	SFU_IR_No._2.1.3	3 - Prior to Operations	Superseded by NEB Condition	90,117,123	Through workshops and 1 on 1 meetings TMEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMEP's Consultation Plan (NEB C-90), and would be reporting the results as per NEB C-117. In addition, TMEP is consulting SFU as per NEB C-123 Evacuation plan.
922	Emergency Management	Simon Fraser University	KMC commits to continued engagement with Simon Fraser University (SFU) on issues such as safety, 24 hour access and risk mitigation which outline the hazards and risks that the Burnaby Terminal poses to SFU, as part of the Emergency Management Plan (EMP) consultation process.	SFU_IR_No._2.1.4	3 - Prior to Operations	Superseded by NEB Condition	90,117,123	Through workshops and 1 on 1 meetings TMEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMEP's Consultation Plan (NEB C-90), and would be reporting the results as per NEB C-117. In addition, TMEP is consulting SFU as per NEB C-123 Evacuation plan.
923	Emergency Management	Simon Fraser University	Kinder Morgan Canada Inc. (KMC) confirms that Simon Fraser University (SFU) will be added to a notification list in the event of an emergency at Burnaby Terminal that may impact SFU.	SFU_IR_No._2.1.4	3 - Prior to Operations	Complete		The Burnaby Terminal and Westridge Marine Terminal Emergency Response Plans now list SFU for notification of an incident.

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924	Emergency Management	Simon Fraser University	Although the full details of the Emergency Management Plan (EMP) documents are not appropriate to include as part of public filing, KMC is willing to meet with Simon Fraser University to discuss KMC's existing and updated EMP documents.	SFU_R_No._2.1.6	3 - Prior to Operations	Superseded by NEB Condition	90, 117, 123	Through workshops and 1 on 1 meetings, TMEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMEP's Consultation Plan (NEB C-90), and would be reporting the results as per NEB C-117. In addition, TMEP is meeting with SFU to discuss evacuation plan as part of NEB C-123.
933	Emergency Management	Calvin Taplay	As with all schools in proximity to its pipeline and terminals, KMC remains willing and able to review Westridge Elementary School's emergency response plan and provide input and advice on the plan if this is requested. Trans Mountain will consult with the District of North Vancouver in Emergency Management planning.	Tiplay_C_IR_No._2.07	3 - Prior to Operations	Superseded by NEB Condition	90, 117	Through 1 on 1 meetings, TMEP has engaged the Burnaby School District and developed and provided a specific "School ERP supplement" for all the schools identified near the TMPL.
939	Emergency Management	District of North Vancouver	Trans Mountain will consult with the District of North Vancouver in Emergency Management planning.	District_of_North_Vancouver_IR_No._2.01.2	3 - Prior to Operations	Superseded by NEB Condition	90, 117	Through workshops and 1 on 1 meetings, TMEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMEP's Consultation Plan (NEB C-90), and would be reporting the results as per NEB C-117.
1,594	Emergency Management	Cheam First Nation and Chawathil First Nation	Consultation regarding Emergency management planning with First Nations will occur during individual sessions to be scheduled with each affected First Nation commencing in Q 2, 2015.	Cheam_and_Chawathil_c.b	3 - Prior to Operations	Superseded by NEB Condition	90, 117	The intervenors have withdrawn from the NEB process, however, Trans Mountain is committed to completing this commitment.
1,597	Emergency Management	Province of British Columbia	Trans Mountain will develop Geographic Response Plans (GRPs) which will become a part of the enhanced Emergency Management Program (EMP).	Province_BC_IR_No._2 .35	3 - Prior to Operations	Superseded by NEB Condition	125	As part of the completion of NEB C-125 and BC EAQ-C-33, KMC is assessing and implementing existing and new Control Points, which will result in a documented inventory of Control Points.
1,615	Emergency Management	Sto:lo Collective	As part of the workshop series described in the response to Recommendation 2 Trans Mountain will offer a focused workshop to review Emergency Response Management planning.	Sto:lo Collective Recommendation #7, #17, #57, #72	3 - Prior to Operations	In Progress		Through workshops and 1 on 1 meetings, TMEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMEP's Consultation Plan (NEB C-90), and would be reporting the results as per NEB C-117.
1,617	Emergency Management	Sto:lo Collective	Trans Mountain will discuss additional emergency response management (ERM) elements with Sto:lo representatives.	Sto:lo Collective Recommendation #10, #18, #19, #72, #84	3 - Prior to Operations	In Progress		Through workshops and 1 on 1 meetings, TMEP has consulted as outlined in NEB C-90 and will continue to engage parties as describe in TMEP's Consultation Plan (NEB C-90), and would be reporting the results as per NEB C-117.

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1,618	Emergency Management	Sto:lo Collective	Trans Mountain will adhere to three-tiered response structure during its emergency response to any incident.	Sto:lo Collective Recommendation #10, #18, #84	4 - Operations	Complete		As part of NEB C-125 KMIC has implemented a three-tiered response structure in it's Emergency Response Plans
1,619	Emergency Management	Sto:lo Collective	Trans Mountain will host 1-day Community Awareness and Emergency Response (CAER) presentation for Sto:lo representatives.	Sto:lo Collective Recommendation #10, #18, #84	4 - Operations	In Progress		Community Awareness and Emergency Response (CAER) is part of existing KMIC Emergency Management program.
1,631	Emergency Management	Sto:lo Collective	In the event of a spill in S'óhl Téñéwx, Sto:lo representation will be invited to participate in Unified Command as part of the Incident Command Structure (ICS).	Sto:lo Collective Recommendation #43	4 - Operations	In Progress		2016 ICS Guide Section 6.4 includes directions that in the event of a multi-jurisdictional incident, Unified Command will be struck and impacted First Nations will be invited to be a member of the Unified Command.
1,632	Emergency Management	Sto:lo Collective	In the event of a spill or leak, Trans Mountain would be responsible for additional monitoring of residual effects and remediation of impacts directly related to and caused by the spill.	Sto:lo Collective Recommendation #43	4 - Operations	In Progress		In the event of a spill or leak monitoring and remediation are part of KMIC incident response and responsibilities
1,657	Emergency Management	Sto:lo Collective	Trans Mountain is committed to engagement regarding Community Awareness and Emergency Response (CAER). Additional reporting requests can be discussed.	Sto:lo Collective Recommendation #85	3 - Prior to Operations	In Progress		Community Awareness and Emergency Response (CAER) is part of existing KMIC Emergency Management program.
3,775	Emergency Management	Kamloops Fire Department	Trans Mountain will meet with the Kamloops Fire Department to develop a mutual aid agreement.	Non-Regulatory Commitment	3 - Prior to Operations	Complete		On 2015-11-01, Mutual Aid Agreement was signed between KMIC and City of Kamloops
114	Employment and Training	NEB	To enhance skill development in support of the Project, Trans Mountain is developing an employment and training policy.	Pre-Application Project Description, p 46.	1 - Prior to Construction	Complete		TMEP Employment Policy filed with the NEB through a consultation update during the hearing. TMEP Training Policy for Aboriginal Peoples filed with the NEB through a consultation update during the hearing.
440	Employment and Training	Ken Kakowich; Robyn Allan	As included in the Application, Volume 5B, Section 7.0: Socio-Economic Effects Assessment, page 191 the Project is committed to maximize the use of local, regional, Aboriginal, provincial and Canadian businesses during the construction and operation of the Project.	Allan_R_IR_No_1.15_bb, Kakowich_K_IR_No_1_4.0, Kakowich_K_IR_No_1_4.3	2 - During Construction	Superseded by NEB Condition	11,12	
445	Employment and Training	NEB	Trans Mountain is committed to maximize employment opportunities for local, regional and Aboriginal groups along the proposed corridor. Trans Mountain will ensure that construction contractors report on a monthly basis hiring statistics that include the percentage of local, regional and Aboriginal hiring's based on total workforce.	NEB_R_No_1.23b, NEB_R_No_1.24d	2 - During Construction	Superseded by NEB Condition	107	

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449	Employment and Training	NEB	Trans Mountain is committed to maximizing opportunities for regional participation in Project-related employment, most of which will be through contracting opportunities related to the Project construction. Where qualified local contractors are available, they will have the opportunity to participate in the contracting process established by Trans Mountain.	Application Volume 5B, 7-177.	1 - Prior to Construction	Superseded by NEB Condition	11, 12	
451	Employment and Training	NEB	Trans Mountain will initiate an Aboriginal Employment and Training Program to support increased access to Aboriginal employment opportunities on the Project, which will further increase employment opportunities for Aboriginal communities.	Application Volume 5B, 7-183.	1 - Prior to Construction	Superseded by NEB Condition	11, 12	
952	Employment and Training	Georgia Strait Alliance	Trans Mountain is committed to maximizing employment and business opportunities for Aboriginal, local and regional groups.	Georgia Strait Alliance e.IR No. 2(b).13a	2 - During Construction	Superseded by NEB Condition	11, 12	
972	Employment and Training	Coldwater Indian Band	Aboriginal capacity inventory data will be provided to Trans Mountain's contractors for hiring purposes and each contractor will be required to report hiring statistics (refer to NEB IR No. 1.24d) on a monthly basis. Additionally, contractors will be required to include a monthly count of the number of hires from the capacity inventory list and a running total of the hires from the capacity inventory list. Trans Mountain will consult with the community and request aggregate information on capacity.	CIIB_IR_No._1.4f	2 - During Construction	Superseded by NEB Condition	11, 12, 107	
1,642	Employment and Training	Sto:lo Collective	Trans Mountain will discuss additional surveys or commitments with Sto:lo employment or procurement with Sto:lo representatives.	Sto:lo Collective Recommendation #62	1 - Prior to Construction	In Progress		
1,644	Employment and Training	Sto:lo Collective	Trans Mountain is committed to continued engagement with Sto:lo representatives to discuss opportunities related to employment.	Sto:lo Collective Recommendation #67	6 - Project Lifecycle	In Progress		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
1.645	Employment and Training	Sto:lo Collective	As part of developing the capacity inventory, Trans Mountain is committed to working with Sto:lo representatives to gather community-level information on Aboriginal labour force (as outlined in the letter shared by Trans Mountain on February 12, 2015) and business capacity for Sto:lo communities (as outlined in the letter shared by Trans Mountain on February 5, 2015). Trans Mountain will share with Sto:lo the full details of the Sto:lo-specific skill and business capacity information collected as part of the capacity inventory in hopes it can assist Sto:lo communities in longer-term economic development initiatives unrelated to the Project.	Sto:lo Collective Recommendation #67, #68	1 - Prior to Construction	In Progress		
1.646	Employment and Training	Sto:lo Collective	Data for the Project-wide capacity inventory will continue to be collected through the construction planning and construction phase. An update to the capacity inventory will be filed with the NEB, and made available to Sto:lo representatives, at least 90 days prior to commencing construction.	Sto:lo Collective Recommendation #67	1 - Prior to Construction	In Progress		
1.647	Employment and Training	Sto:lo Collective	In addition to an agreement between Sto:lo and Trans Mountain to create a Project-specific economic development strategy, Trans Mountain will engage directly with Sto:lo representatives during each Aboriginal local and regional employment and business opportunities monitoring cycle. Trans Mountain will develop a summary of employment and business opportunities (based on the monitoring indicators) specific to the Sto:lo communities. Trans Mountain will discuss each Sto:lo-specific Aboriginal, local and regional employment and business opportunity monitoring outcome with Sto:lo representatives, as part of the mutually agreed upon engagement strategy, and identify any new opportunities to further enhance employment or business opportunities for Sto:lo members.	Sto:lo Collective Recommendation #70, #67	1 - Prior to Construction	In Progress		
1.882	Employment and Training	NEB	Trans Mountain will create an online employment communications tool where potential workers who are interested in employment can register to receive regular updates on employment opportunities.	Application Volume 5B, 7-43.	1 - Prior to Construction	Complete		

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2,117	Employment and Training	NEB	Trans Mountain is committed to a legacy of education and training opportunities, particularly for those in Alberta and BC, so individuals may directly benefit from employment in the many trades and professions needed to build and operate a pipeline. Trans Mountain is developing a program to provide educational funding to support students in the trades, technology and environmental programs related to the pipeline industry.	NEB_IR_No._3.036	1 - Prior to Construction	Complete		
2,942	Employment and Training	Metis Nation of Alberta Gunn Metis Local 55	Trans Mountain is committed to maximizing Aboriginal employment on the construction of the Project.	Gunn Métis Local 55_IR_No._2.34, Gunn Métis local 55_IR_No._2.36	1 - Prior to Construction	Superseded by NEB Condition	11, 12	
2,995	Employment and Training	NEB	Trans Mountain will initiate an Aboriginal Employment and Training Program to support increased access to Aboriginal employment opportunities on the Project.	NEB_IR_No._3.008a-Attachment_1	1 - Prior to Construction	Superseded by NEB Condition	11, 12	
4	Environment	Adams Lake Indian Band	All dredging will be in accordance with the Department of Fisheries and Oceans Canada (DFO), Environment Canada (EC), Vancouver Fraser Port Authority DBA Port Metro Vancouver and other regulatory requirements and will occur within the DFO least-risk work window for Burrard Inlet, from August 16 to February 28, unless otherwise authorized by DFO (see Section 7.6.9.4 in Volume 5A). If dredging is required, detailed sampling will be conducted in the dredge area not already sampled to characterize sediment chemistry. Sediment plume modelling will be employed to determine the extent and magnitude of total suspended solids generated during dredging.	ALIB_IR_No._1.3.01a	1 - Prior to Construction	Superseded by NEB Condition	35	
5	Environment	Adams Lake Indian Band	All hydrostatic test water to be released directly or indirectly into a watercourse/wetland/lake will be tested prior to and during release. Any parameters to be tested that are not measurable in the field will be tested prior to release, not during release. Hydrostatic test water will be tested and verified as meeting guidelines for contaminant concentrations before it is released in accordance with approval/permit/notification conditions.	ALIB_IR_No._1.2.6a	1 - Prior to Construction	Superseded by NEB Condition	72	
7	Environment	NFB	Trans Mountain will review and consider concerns raised by Aboriginal communities regarding the roles and responsibilities of the Aboriginal Monitors.	NEB_IR_No._1.22e	1 - Prior to Construction	Superseded by NEB Condition	98	
16	Environment	Parents From Cameron Elementary School Burnaby	Noise management plans that will be developed for the Project construction will incorporate the components of the NEB Draft Condition No. 29 (Pipeline Environmental Protection Plan) or the NEB Letter - Draft Conditions and Regulatory Oversight (NEB 2014) limit the effect of noise at sensitive receptors and include a monitoring component to verify effectiveness of controls.	Cameron_School_Parents_IR_No._1.2.1a	1 - Prior to Construction	Superseded by NEB Condition	74,80,86	

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24	Environment	City of Abbotsford	Trans Mountain will commit to meeting the specifications of the Ledgeview Golf course in its restoration methods (for example, type of soil, grass).	City_of_Abbotsford_IR_No._1.25b.ii	5 - Post-Construction Monitoring	Superseded by Management Plan		
27	Environment	City of Abbotsford	Trans Mountain will develop and implement a restoration plan for Ledgeview Golf Course.	City_of_Abbotsford_IR_No._1.25b.i	1 - Prior to Construction	Superseded by Management Plan		
32	Environment	City of Burnaby	The Trans Mountain contractor (yet to be determined) will select a wildlife-proof garbage container suitable for the volume of material expected.	City_Burnaby_IR_No._1.19.10f	1 - Prior to Construction	Superseded by NEB Condition	72,78,81	
34	Environment	City of Burnaby	Trans Mountain will conduct construction noise monitoring at the Westridge Marine Terminal which will incorporate the components of the NEB Draft Condition No. 33 of the NEB's Letter - Draft Conditions and Regulatory Oversight (NEB 2014). For noise during operations, a monitoring program will be conducted at the terminal as outlined in Section 9.10 of Volume 6A, Environmental Compliance of the Application.	City_Burnaby_IR_No._1.29.01b	1 - Prior to Construction	Superseded by NEB Condition	74,80,86	
38	Environment	Halston Hills Co-op	Trans Mountain will endeavour to limit the amount of tree removal adjacent to the Halston Hills Co-op. Depending on factors such as location, land-use, etc., replanting of trees may be undertaken within the temporary workspace locations that were cleared as part of the proposed construction. Final clearing and restoration requirements will be determined through detailed engineering and design.	Halston_Hills_IR_No._1.14g.i	1 - Prior to Construction	In Progress		
40	Environment	Parents From Cameron Elementary School Burnaby	Trans Mountain will manage noise through applicable NEB Draft Conditions No. 29 through 33, and 57 relating to updated Environmental Protection Plans, Horizontal Directional Drilling Noise Management Plan, a Noise Management Plan for pump stations, facilities and Westridge Marine Terminal, and post-construction noise surveys at select terminals.	Cameron_School_Parents_IR_No._1.2.2a	6 - Project Lifecycle	Superseded by NEB Condition	72,74,78,80,81,141	
45	Environment	Simpson First Nation	Aboriginal monitors will be invited to attend kick-off meetings.	SIMPSON_F_NIR_No._1.149a	1 - Prior to Construction	Superseded by NEB Condition	72	
46	Environment	City of Abbotsford	The Reclamation Plan will be finalized before construction. Trans Mountain will consult with the City of Abbotsford to develop the reclamation strategy for City lands that may be disturbed during construction of the TMEP.	City_of_Abbotsford_IR_No._2.2.09c	2 - During Construction	In Progress		
48	Environment	NEB	An Agricultural Monitor who is familiar with soils, drainage and agricultural production will be in place for the lower Mainland of BC. Environmental Inspectors will be in place in all geographic areas.	NEB_IR_No._2.045b	1 - Prior to Construction	Superseded by NEB Condition	72	

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49	Environment	NEB	In the case where use of an impact hammer is deemed necessary for engineering reasons, Trans Mountain will implement underwater noise mitigation such as bubble curtains at the Westridge Marine Terminal.	Application Volume 5A, 7-467.	2 - During Construction	Superseded by NEB Condition	81	
52	Environment	NEB	Trans Mountain will develop and implement a Worker Code of Conduct policies, which will cover guidance on the safe and respectful use of community facilities.	Application Volume 5B, 7-150.	1 - Prior to Construction	Superseded by NEB Condition	59	
61	Environment	NEB	Trans Mountain will work with Environment Canada and comply with the Migratory Birds Convention Act and Migratory Birds Sanctuary Regulations related to the Project components and impacts. Trans Mountain will conduct clearing and preconstruction activities outside the minimum migratory bird restricted activity period (RAP) of May 1 to July 31 where practical.	Application Volume 5A, Technical Update No. 1 and Consultation Update No. 2 - Part 2 Table 1.6.2-1	2 - During Construction	Superseded by NEB Condition	72, 78, 81	
63	Environment	NEB	Trans Mountain will, as soon as weather and soil conditions permit and insofar as it is practicable so to do, bury and maintain the Pipeline in a manner that will not interfere with the drainage or ordinary cultivation of the lands, and will restore all drains damaged or disturbed by the operation, according to good drainage practice.	Application Volume 2, appendix E.	2 - During Construction	Superseded by NEB Condition	72	
65	Environment	Adams Lake Indian Band	In the unlikely event existing sediment contamination is identified at a watercourse crossing during construction, Trans Mountain will implement remedial measures in the Contamination Discovery Contingency Plan in Appendix B of Volume 6B of the Application.	AUB_IIR No. 1-2.3a.2, Volume 6B Appendix B (A35253 PDF page 165)	2 - During Construction	Superseded by NEB Condition	72	
67	Environment	NEB	Any salvaged topsoil or stripping will be segregated and stockpiled along the construction right-of-way, and at facility sites in low-profile berms or in piles adjacent to the site perimeter.	Pre-Application Project Description, p 18.	2 - During Construction	Superseded by NEB Condition	72, 78, 81	
69	Environment	NEB	The contractor(s), subcontractors and the inspector(s) will be provided with copies of all approvals/permits including the most recent updates and revisions, and will comply with all conditions presented to Trans Mountain.	Application Volume 5A, 7-128.	3 - Prior to Operations	Superseded by NEB Condition	72, 78, 81	

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70	Environment	NEB	To avoid or reduce effects of a drilling mud release on surface water quality, Trans Mountain will continually monitor for sediment release (i.e., turbidity and total suspended solids [TSS]) throughout the crossing construction period. In the event of a release into a watercourse, Trans Mountain will immediately suspend drilling activities and implement measures outlined in the Drilling Mud Release Contingency Plan to reduce effects of drilling mud release into the watercourse. Any releases would be reported to Fisheries and Oceans Canada (DFO) and Alberta Environment and Sustainable Resource Development (AESRD) or BC Ministry of Environment (MOE) and clean up and monitoring will be carried out until water quality is returned to existing (background) conditions.	Application Volume 5A, 7-70.	2 - During Construction	Superseded by NEB Condition	72	
73	Environment	NEB	Trans Mountain will consult with and inform landowners of the potential to be affected by emissions from construction activities prior to commencement of these activities in proximity to the respective landowners.	Application Volume 5A, 7-89	1 - Prior to Construction	Superseded by NEB Condition	72	
75	Environment	Peters Band	Before construction, Trans Mountain will collect baseline water quality data from existing water supply wells in areas of the reserve that are identified as having potential for contaminated soils. The wells will be resampled after trenching and when construction in the area has been completed. Sampling data will be compared to the baseline conditions.	Peters_Band_IR_No_... 2(b), 2.5(b)	1 - Prior to Construction	Superseded by NEB Condition	46, 72	
86	Environment	City of Burnaby	Clearing operations for pipeline in the City of Burnaby will not entail any burning activities. Clearing activities for Burnaby will follow non-burning protocols as outlined in Section 8 of the Environmental Protection Plan (EPP), Volume 6B.	City_Burnaby_IR_No_... 1.33, 2.7c	1 - Prior to Construction	Superseded by NEB Condition	72	
93	Environment	Natural Resources Canada	The debris disposal mitigation measures, as they pertain to potential fire hazards, will be incorporated into the Fire Prevention Plan.	GoC_NRCan_IR_No_... 07.1b	1 - Prior to Construction	Superseded by NEB Condition	89	
100	Environment	Adams Lake Indian Band	Prior to construction, a vegetation survey will be conducted to identify if any species that require special consideration before, during and after construction are present along the construction right-of-way. If warranted, detailed vegetation (including rare plants) assessments will be completed at sites where reclamation problems are identified in the Environmental Issues List.	A1B_F-IR_No._1.4.5c	1 - Prior to Construction	Superseded by NEB Condition	40, 42, 45	
113	Environment	Adams Lake Indian Band; Neskonlith Indian Band	Trans Mountain plans to hire qualified Aboriginal monitors for Environmental monitoring and inspection jobs during the construction of the Project.	A1B_IR_No._1.6.04, Neskonlith_IB_IR_No. 1.i, 2.e	2 - During Construction	Superseded by NEB Condition	98	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
128	Environment	Stó:lō Collective	Trans Mountain will discuss the opportunity for Stó:lō participation in pre-construction weed surveys.	Stó:lō Collective Recommendation #35	1 - Prior to Construction	In Progress		
156	Environment	City of Burnaby	Trans Mountain will review the status of the current storm water discharge permit for Westridge Marine Terminal with the BC Ministry of Environment to determine if the existing permit will remain in effect, if the existing permit will require an amendment, or if a new permit will be required.	City_Burnaby_IR_No._1.20.02a	1 - Prior to Construction	Complete		
175	Environment	Metro Vancouver	Trans Mountain will engage with Metro Vancouver regarding their request for stack testing and dispersion modelling when engineering plans are further advanced.	Metro_Vancouver_IR_No._1.1.6.03g	1 - Prior to Construction	In Progress		
177	Environment	Province of British Columbia	Trans Mountain plans to identify all water wells within the Project Footprint prior to construction.	Province_BC_IR_No._1.3.8c	1 - Prior to Construction	Superseded by NEB Condition	93	
195	Environment	NEB	A master watercourse crossing table will be created by combining the Fish Habitat list and the Hydrology list to ensure that all watercourses have been captured and accounted for and submitted as part of Technical Update No. 3 on September 4, 2014.	NEB_IR_No._2.101e (Filing ID A3ZAT9), NEB_f-IR_No._2.101e (Filing ID AAAFY8), NEB_f-IR_No._2.101e-Attachment_1 (A4AY9)	1 - Prior to Construction	Superseded by NEB Condition	43	
196	Environment	Stó:lō Collective	Trans Mountain will discuss the opportunity for Stó:lō participation in pre-construction weed surveys.	Stó:lō Collective Recommendation #35	1 - Prior to Construction	In Progress		
206	Environment	City of Burnaby	Trans Mountain land agents will work with private property owners and Trans Mountain Reclamation, in conjunction with Trans Mountain Permitting, on reclamation plans for affected areas. Where deep trenchless methods are used the green belts will not be disturbed.	City_Burnaby_IR_No._1.33.09d	1 - Prior to Construction	Superseded by NEB Condition	71, 72	
224	Environment	Stó:lō Collective	Trans Mountain will continue to engage Stó:lō representatives through all phases of the Project. Vegetation monitoring is part of the Post Construction Environmental Monitoring (PCEM) program and vegetation re-establishment will be compared to a similar reference plant community located adjacent to, or within, the vicinity of the construction right-of-way and pre-construction conditions.  Discusses the opportunity for Stó:lō participation and input into the planned monitoring scheduled.	Stó:lō Collective Recommendation #38, 39	5 - Post-Construction Monitoring	In Progress		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
234	Environment	Stó:lō Collective	Trans Mountain will continue to engage Stó:lō representatives through all phases of the Project. Vegetation monitoring is part of the Post Construction Environmental Monitoring (PCEM) program and vegetation re-establishment will be compared to a similar reference plant community located adjacent to, or within, the vicinity of the construction right-of-way and pre-construction conditions.	Stó:lō Collective Recommendation #38, NEB_I_R_No._1.46c	5 - Post-Construction Monitoring	In Progress		
259	Environment	Adams Lake Indian Band	Kinder Morgan will prepare a spotted owl mitigation plan for the Project, following the guidelines and recommendations provided by BC Ministry of Forests, Lands and Natural Resource Operations (MFLNRO), which have been applied on previous development projects (refer to NEB IR No. 1.46a and c). Trans Mountain will ensure consultation with BC MFLNRO and Environment Canada regarding field survey and mitigation planning for Williamson's sapsucker and Lewis's woodpecker critical habitat continues over the planning phase of the Project to develop appropriate mitigation that meets regulatory expectations and conservation objectives.	ALIB_I_R_No._1.5.5, NEB_I_R_No._1.46c	1 - Prior to Construction	Superseded by NEB Condition	38	
260	Environment	Adams Lake Indian Band	As part of the Post-Construction Environmental Monitoring (PCEM) program, Trans Mountain will monitor the success of access control measures implemented along segments of the construction right-of-way by visually assessing evidence of human access.	ALIB_I_R_No._1.5.7e	5 - Post-Construction Monitoring	47	Superseded by NEB Condition	
261	Environment	Adams Lake Indian Band	In areas where natural recovery is unsuccessful, remedial measures will be implemented and may include but not be limited to soil stability or erosion control measures, seeding areas using an approved native seed mix, planting tree and/or shrubs, or additional access control measures to assist in vegetation establishment, survival and growth.	ALIB_F_I_R_No._1.5.6a	6 - Project Lifecycle	151	Superseded by NEB Condition	
265	Environment	Adams Lake Indian Band	Measurable targets will be developed as part of the Post Construction Environmental Monitoring (PCEM) program, by which the success of mitigation measures can be measured and the need for adaptive measures identified.	ALIB_I_R_No._1.5.2a,c, ALIB_I_R_No._1.6.2a,b	5 - Post-Construction Monitoring	151	Superseded by NEB Condition	
266	Environment	Adams Lake Indian Band	Should the potential for serious harm to fish that are part of, or support, a commercial, recreational, or Aboriginal (CRA) fishery unless authorized by the Department of Fisheries and Oceans Canada (DFO) be confirmed either during the self-assessment or upon National Energy Board (NEB) or DFO review, Trans Mountain will develop an appropriate Conceptual Fish Offset Plan (Offset Plan).	ALIB_I_R_No._1.3.21	1 - Prior to Construction	110	Superseded by NEB Condition	

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
267	Environment	Adams Lake Indian Band	Trans Mountain commits to developing and implementing a mitigation strategy for potentially affected grizzly bear populations that have an elevated conservation status. This grizzly bear mitigation strategy will include objectives consistent with current regulatory guidelines and will be developed in consultation with the appropriate regulatory authorities.	ALIB_IR_No._1.5.7d	1 - Prior to Construction	Superseded by NEB Condition	56	
268	Environment	Adams Lake Indian Band	Where required under the Canadian Environmental Assessment Act, 2012 and the National Energy Board Filing Manual, follow-up programs will be developed to compare predicted effects of the Trans Mountain Expansion Project to post-construction conditions.	ALIB_IR_No._1.6.09b	5 - Post-Construction Monitoring	Superseded by NEB Condition	151	
269	Environment	Adams Lake Indian Band; Kwantlen First Nation; Township of Langley	Wherever feasible, watercourse crossing construction activities will be timed to occur within the least risk biological windows to avoid causing serious harm to fishes and remain in compliance with the Fisheries Act.	ALIB_IR_No._1.3.13a, ALIB_IR_No._1.3.24b, Kwantlen_FN_IR_No._1.05;3, Langley_IR_No._1.01b	1 - Prior to Construction	Superseded by NEB Condition	43,72	
270	Environment	Angelika Hackett; NEB	Trans Mountain commits to common energy pipeline industry practices to minimize direct greenhouse gas emissions during construction and operation of the pipeline.	Hackett_A_IR_No._1.2. .1b, NEB_IR_No._2.019b, NEB_IR_No._1.32, NEB_IR_No._1.31, NEB_IR_No._1.33b	6 - Project Lifecycle	Superseded by NEB Condition	52,53,54,55, 72,79,85	
271	Environment	Asini Wachi Nehiyawak Traditional Band	Trans Mountain will notify all relevant aboriginal groups regarding the development of the post construction monitoring plan for reactivation activities.	AWNIB_IR_No._1.05. 1b	5 - Post-Construction Monitoring	Superseded by NEB Condition	151	
272	Environment	Sto:lo Collective	Trans Mountain welcomes the opportunity to discuss the establishment of infrastructure and capacity for Sto:lo to implement on-going processes of air and water quality monitoring.	Sto:lo Collective Recommendation #53	1 - Prior to Construction	In Progress		
273	Environment	BC Nature and Nature Canada	Trans Mountain will provide an update on routing in Surrey Bend Regional Park, Colony Farms and Brunette River Greenway in Technical Update No. 1, to be submitted to the NEB in Q3 2014. The update will include additional information and a map of the proposed and alternative corridors being considered.	BC_Nature_Nature_CDAIR_No._1.16a	1 - Prior to Construction	Superseded by NEB Condition	7	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
274	Environment	City of Burnaby; BC Nature and Nature Canada	Trans Mountain is supportive of a collaborative approach to long-term monitoring for marine birds and will endeavour to meet with Environment Canada (EC) to discuss the potential for development of a long-term monitoring program as a partnership with others.	BC_Nature_Nature_Cd_a_1R_No._1.12b, City_Burnaby_IR_No._1.27.07c	2 - During Construction	Scoping		
277	Environment	BC Parks; NEB	All access roads and trails would be reclaimed or deactivated and re-vegetated in consultation with BC Parks and other stakeholders.	BC Parks boundary adjustment application (August 2014)	2 - During Construction	Superseded by Management Plan		
279	Environment	BC Parks; NEB	At pre-determined locations where vegetation is disturbed by construction, the use of plant transplants may be considered. Options for woody species re-vegetation include installation of nursery grown plant plugs, installation of locally sourced dormant woody species transplants, and seeding of native grass.	BC Parks boundary adjustment application (August 2014)	2 - During Construction	Superseded by NEB Condition	72	
280	Environment	BC Parks; NEB	During construction, Trans Mountain will ensure that all equipment arriving on site is clean and free of soils and plant materials. Where areas of concern for invasive plant species are identified, machine clean-off stations will be installed to mitigate for the potential for the spread of weeds.	BC Parks boundary adjustment application (August 2014)	1 - Prior to Construction	Superseded by NEB Condition	72	
284	Environment	BC Parks; NEB	Seed mixes will be developed in consultation with the BC Parks conservation specialist and will consist of species native to the park.	BC Parks boundary adjustment application (August 2014)	1 - Prior to Construction	Superseded by NEB Condition	72	
285	Environment	BC Parks; NEB	Temporary fencing that will protect newly seeded and planted areas from livestock grazing or unauthorized access may be necessary at some sites in the Project Footprint. The need, type and extent of the fencing will be determined in consultation with the land owner or land manager.	BC Parks boundary adjustment application (August 2014)	2 - During Construction	Superseded by NEB Condition	72	
286	Environment	John Black	Trans Mountain will conduct a wildlife survey at the Burnaby Terminal prior to clearing and construction activities.	Black_J_IR_No._1.2.1a	2 - During Construction	Superseded by NEB Condition	78	
287	Environment	Burnaby Residents Opposing Kinder Morgan Expansion - BROKE; City of Burnaby; Tsleil-Waututh Nation	Trans Mountain has committed to filing the detailed human health risk assessment with the National Energy Board on June 16, 2014.	BROKE_IR_No._1.7e, BROKE_IR_No._1.3c, City_Burnaby_IR_No._1.01.09d, Tsleil-Waututh_Nation_IR_No._1.4.2b	1 - Prior to Construction	Complete		

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Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
288	Environment	Canadian Parks and Wilderness Society - BC Chapter	An affected area analysis for Old Growth Management Areas (OGMAs) has been completed and will be updated when the construction right-of-way is finalized. Trans Mountain is working with the BC Ministry of Forests, Lands and Natural Resource Operations to complete OGMAs mitigation commitments.	CPAWS_IR_No._1.2.1	1- Prior to Construction	Superseded by NEB Condition	76	
289	Environment	Canadian Parks and Wilderness Society - BC Chapter; New Democratic Party of Canada; NEB	Trans Mountain will file the spotted owl mitigation plan with the NEB 6 months prior to commencing construction in Wildlife Habitat Areas.	NEB_IR_No._1.46c, CPAWS_IR_No._1.2.4, NDP_IR_No._1.1.8f	1- Prior to Construction	Superseded by NEB Condition	38	
290	Environment	Canadian Parks and Wilderness Society - BC Chapter; New Democratic Party of Canada; NEB	Trans Mountain will provide an update on consultation related to the mitigation strategy for the North Cascades Grizzly Bear Population Unit with the filing of NEB IR Round 2 responses in Q3 2014.	NEB_IR_No._1.47c, CPAWS_IR_No._1.2.4, NDP_IR_No._1.1.8f	1- Prior to Construction	Superseded by NEB Condition	56	
291	Environment	Canadian Parks and Wilderness Society - BC Chapter; New Democratic Party of Canada; NEB	Trans Mountain will provide details of mitigation strategies for Lewis's woodpecker and Williamson's sapsucker in NEB IR Round 2 responses in Q3 2014.	NEB_IR_No._1.45c, CPAWS_IR_No._1.2.4, NDP_IR_No._1.1.8f	1- Prior to Construction	Superseded by NEB Condition	44	
292	Environment	Canadian Parks and Wilderness Society - BC Chapter; New Democratic Party of Canada; NEB	Trans Mountain will provide results of meeting with Environment Canada (EC) and BC Ministry of Forests, Lands and Natural Resource Operations (MFLNR) related to Lewis's woodpecker and Williamson's sapsucker during NEB IR Round 2.	CPAWS_IR_No._1.2.4, NEB_IR_No._1.45b, MFLNR_No._1.1.8f	1- Prior to Construction	Complete		
293	Environment	Canadian Parks and Wilderness Society - BC Chapter; New Democratic Party of Canada; NEB	Trans Mountain will provide results of meeting with Environment Canada (EC) during NEB IR Round 2.	NEB_IR_No._1.44c and 1- Prior to Construction d	1- Prior to Construction	Superseded by NEB Condition	40, 44	
294	Environment	Canadian Parks and Wilderness Society - BC Chapter; New Democratic Party of Canada; NEB	Trans Mountain will update the Project Pipeline Environmental Protection plan with additional site-specific mitigation measures for watercourses identified as critical Nooksack date habitat, to be filed at least 90 days prior to construction.	CPAWS_IR_No._1.2.4, NEB_IR_No._1.52d, NEB_IR_No._1.52e, NDP_IR_No._1.1.8f	1- Prior to Construction	Superseded by NEB Condition	75	

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Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
295	Environment	Catherine Jensen; Canadian Parks and Wilderness Society - BC Chapter; City of Coquitlam; Pro Information Pro Environment United People Network; Neskonlith Indian Band; New Democratic Party of Canada; NEB	If the results of the Stage 2 watercourse assessment change any of the conclusions presented in the Environmental and Socio-Economic Assessment (Volume A of the Application), Trans Mountain will submit an update to the NEB in Q4 2014.	CPAWS_IR_No._1.2.4; NEB_IR_No._1.52a, NEB_IR_No._1.52b, NEB_IR_No._1.52c, NEB_IR_No._1.52d, NEB_IR_No._1.52e, NEB_IR_No._1.53a, NEB_IR_No._1.53b, NEB_IR_No._1.53c, NEB_IR_No._1.53d, NEB_IR_No._1.53e, NEB_IR_No._1.53f, NEB_IR_No._1.53g, NEB_IR_No._1.53h, NEB_IR_N	1 - Prior to Construction	Complete		
296	Environment	City of Abbotsford	Abbotsford – Sumas Aquifer will be assessed as a high consequence area.	Technical Update No. 1 and Consultation Update No. 2 - Part 5 Update Stakeholder Engagement Part 01. Table 1.6.3-1	1 - Prior to Construction	Complete		
297	Environment	City of Abbotsford; NEB	Vedder Aquifer will be assessed as a high consequence area.	Technical Update No. 1 and Consultation Update No. 2 - Part 5 Update Stakeholder Engagement Part 01. Table 1.6.3-1	1 - Prior to Construction	Complete		
298	Environment	City of Burnaby	A Post-Construction Environmental Monitoring program will be conducted following construction to monitor any potential effects of the activities on adjacent vegetation.	City_Burnaby_IIR_No._1.38.02b	5 - Post-Construction Monitoring	Superseded by NEB Condition	151	
299	Environment	City of Burnaby	An Environmental Inspector will be on-site during dredging activities to monitor the effectiveness of mitigation measures.	City_Burnaby_IIR_No._1.32.02b	1 - Prior to Construction	Superseded by NEB Condition	81	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (k) Number	Additional Comments
301	Environment	City of Burnaby	Trans Mountain is completing additional dispersion modelling to inform engineering design related to terminal operations during product loading and unloading. This information will be provided in the Technical Update No. 1 in Q3 2014.	City_Burnaby_IR_No._1.28.02a, City_Burnaby_IR_No._1.28.03a, FVRD_IR_No._1.02a, FVRD_IR_No._1.09a, GoC_EC_IR_No._1.063 , GoC_EC_IR_No._1.096 c, GoC_EC_IR_No._1.103 a, Living_Oceans_IR_No._1.21a, Living_Oceans_IR_No._1.58b, Metro_Vancouver_IR_No._1.1.6.01b, Metro_Vancouver_IR_No._1.1.6.02a, Metro_Vancouver_IR_No._1.1.6.03a, Metro_Vancouver_IR_No._1.1.6.03b, Metro_Vancouver_IR_No._1.1.6.03h	1 - Prior to Construction	Complete		
302	Environment	City of Burnaby	Trans Mountain will add a statement to the Environmental protection plans for the Pipeline, Facilities and Westridge Marine Terminal components of the Trans Mountain Expansion Project that it will continue to work with local municipalities to develop weed control plans that will be required for the Project.	City_Burnaby_IR_No._1.20.04b	1 - Prior to Construction	Superseded by NEB Condition	45,72,75,81	
303	Environment	City of Burnaby	Trans Mountain will adopt all mitigation measures recommended in Technical Report 5C-3 of Volume 5C, Terrestrial Noise and Vibration	City_Burnaby_IR_No._1.27.02a	2 - During Construction	Superseded by NEB Condition	74,80,86,141	
304	Environment	City of Burnaby	Trans Mountain will commit to supplying Living Oceans with the hourly meteorological data that has been collected since the commissioning of the Automated Monitoring System (SAM) units at the Burnaby Terminal by August 15th, 2014.	City_Burnaby_Attachment - Table 1.04.14h	1 - Prior to Construction	Complete		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (K) Number	Additional Comments
305	Environment	City of Burnaby	Trans Mountain will prepare an Air Emissions Management Plan for the Westridge Marine Terminal as per NEB Draft Condition No. 19 (August 2015) which will involve installing a new ambient air quality monitoring station.	City_Burnaby_IR_No_104.14h, City_Burnaby_IR_No_1.28.01c, City_Burnaby_IR_No_1.03.07f, City_Burnaby_IR_No_2.085, City_Burnaby_IR_No_2.086, NEB_R_No_1.35a, DNV_IR_No_1.5.03d, Metro_Vancouver_IR_No_1.6.03i, FVRD_IR_No_2.19,	1 - Prior to Construction	Superseded by NEB Condition	\$2
306	Environment	Sto:lo Collective	Trans Mountain welcomes the opportunity to discuss the establishment of infrastructure and capacity for Sto:lo to implement on-going processes of air and water quality monitoring.	Sto:lo Collective Recommendation #53	1 - Prior to Construction	In Progress	
309	Environment	District of North Vancouver	Trans Mountain will install a new ambient air quality monitoring station at the Westridge Marine Terminal as per NEB Draft Condition No. 21 (April 2014).	District_of_North_Vancouver_IR_No_1.5.03	6 - Project Lifecycle	Superseded by NEB Condition	\$2
310	Environment	Environment Canada	Trans Mountain proposes to meet with Environment Canada (EC) and the other intervenors involved in the Lower Fraser Valley Air Quality group who are interested, in Q3 2014, to clarify assumptions and methodology for an updated marine air quality/greenhouse gas assessment using the Marine Emission Inventory Tool (MET) to be conducted in 2015. [RE: EC requests that the Proponent re-evaluate the Base Case with berth and anchorage emissions included.]	Environment Canada Attachment -Table 1.058	1 - Prior to Construction	Complete	
311	Environment	Environment Canada; Metro Vancouver	Trans Mountain recognizes that updating the photochemical modelling using the updated Marine Emission Inventory Tool (MET) would be valuable to Environment Canada (EC), Metro Vancouver (MV) and Fraser Valley Regional District (FVRD) and commits to undertaking a similar modeling effort but using the updated MET when it is available. This update using the Community Multi-Scale Air Quality model would not include all of the additional scenarios (i.e., another ozone episode, typical ozone episode under other meteorological conditions, seasonal and annual time periods) jointly requested by EC, MV and FVRD.	Environment Canada-Attachment -Table 1.076a)	1 - Prior to Construction	Complete	Report filed as attachment as part of Reply Evidence in August 2015.

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312	Environment	Fraser Valley Regional District	Trans Mountain commits to complying with Metro Vancouver's Non-Road Diesel Engine Emission Regulation while operating in the Fraser Valley Regional District.	Fraser Valley Regional District Attachment - Table 1.04(c)	2 - During Construction	Scoping		
313	Environment	Fraser Valley Regional District	Trans Mountain is committed to conducting water quality monitoring during construction.	FVRD_IR_No._1.27b	2 - During Construction	Superseded by NEB Condition	72	
314	Environment	Fraser Valley Watersheds Coalition	In the event an amphibian salvage is needed, a specific plan will be developed for that location. Conditions of the amphibian salvage permit will be adhered to.	FVWC_IR_No._1.24	2 - During Construction	Superseded by NEB Condition	72	
315	Environment	Environment Canada; NEB	If a wetland is determined to not be on the trajectory to returning to pre-construction functional condition at the end of the Wetland Function Post-construction Monitoring Program (i.e., post-construction functional condition category is less than the pre-construction category), Trans Mountain will discuss the next steps with the NEB and Environment Canada (EC) to achieve the goal of "no net loss" of wetland function.	NEB_IR_No._2.051b, GoC_EC_IR_No._2.051	1 - Prior to Construction	Superseded by NEB Condition	41	
316	Environment	Environment Canada	Trans Mountain is committed to working with provincial regulatory agencies, tenure holders, Aboriginal communities and other stakeholders to identify opportunities to address potential residual Project effects on southern mountain caribou habitat.	EC_PIR_No._1.16	1 - Prior to Construction	Superseded by NEB Condition	37	
318	Environment	Environment Canada	Trans Mountain will meet with Environment Canada (EC) in April 2014 to discuss a collaborative, industry-wide approach to the development of a long-term monitoring program for marine birds.	EC_PIR_No._1.19	1 - Prior to Construction	Complete		
319	Environment	Environment Canada	If dredging is required, detailed sampling will be conducted in portions of the dredge area not already sampled to characterize sediment chemistry. Evaluation of disposal methods and re-use options will be conducted when data are available for the proposed dredge volume, and the chemical and physical characteristics of sediment in the dredge area are known.	GoC_EC_IR_No._1.020	1 - Prior to Construction	No Longer Applicable		Dredging is no longer required.
320	Environment	Environment Canada	Trans Mountain will ensure Peacock vinyl lichen ( <i>leptogium polycarpum</i> ) is included in Table B3 which lists potential rare plant and lichen species for the BC component of the proposed project.	GoC_EC_IR_No._1.048	1 - Prior to Construction	Complete		
321	Environment	Environment Canada	Trans Mountain will continue to consult with Environment Canada (EC) regarding recommendations and site-specific mitigation for Species at Risk Act (SARA) listed vegetation species that exist along the Project footprint.	GoC_EC_IR_No._1.046	1 - Prior to Construction	Superseded by NEB Condition	40	
322	Environment	Environment Canada	Where conflicts in mitigation measures such as timing windows may arise, Trans Mountain will consult with the appropriate provincial regulatory agencies to determine practical and effective mitigation.	GoC_EC_IR_No._1.054	1 - Prior to Construction	Superseded by NEB Condition	37,38,44,56	

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323	Environment	Natural Resources Canada	Environmental Inspectors will log the locations of highly vulnerable aquifers where mitigation measures are needed. These locations will be documented in the Construction As-Built report.	GoC_NRCan_IR_No._1 .04.1	2 - During Construction	Superseded by Management Plan		
324	Environment	Natural Resources Canada	In the event that highly decayed logs with suitability to provide wildlife habitat are encountered, they will be set aside during construction and then replaced onto the right-of-way during final clean-up, where possible.	GoC_NRCan_IR_No._1 .06.0	1 - Prior to Construction	Superseded by NEB Condition	44	
325	Environment	Natural Resources Canada	Visual monitoring of sea conditions will occur throughout the day when dredging is in progress, combined with frequent inspections of turbidity curtains.	GoC_NRCan_IR_No._1 .01.3c	2 - During Construction	Superseded by NEB Condition	35	
326	Environment	Parks Canada Agency	The restoration program for works conducted within Jasper National Park that cause disturbance to soil and vegetation will be based on classifications according to the soil and vegetation types as described in the Ecological Land Classification system for Jasper National Park.	GoC_Parks_IR_No._1.2.3	1 - Prior to Construction	Superseded by Management Plan		
327	Environment	Parks Canada Agency	Trans Mountain is committed to monitor specific issues beyond the five years in Jasper National Parks if environmental issues warrant. Trans Mountain is committed to the standards outlined in the Line Leaseholders Working Group.	GoC_Parks_IR_No._1.2.7	6 - Project Lifecycle	In Progress		
328	Environment	Parks Canada Agency	Trans Mountain is committed to the Management Objective / Desired End Result with respect to Heritage Resources for reactivation activities in Jasper National Park.	GoC_Parks_IR_No._1.3.3	1 - Prior to Construction	Superseded by Management Plan		
329	Environment	Parks Canada Agency	Trans Mountain is committed to working with the Parks Canada Agency in developing a set of Management Objectives / Desired End Results that addresses commemorative integrity for the proposed reactivation activities on the Trans Mountain Expansion Project.	GoC_Parks_IR_No._1.3.1	1 - Prior to Construction	Superseded by Management Plan		
330	Environment	Metro Vancouver	Trans Mountain commits to meet with Metro Vancouver to discuss the methodology and results related to meeting applicable ambient air quality objectives.	Metro Vancouver Attachment - Table 1.1.6.04b	1 - Prior to Construction	Complete		
331	Environment	Metro Vancouver	Trans Mountain will install a new ambient monitoring station at the Westridge Marine Terminal in 2015 to meet the requirements of NEB Draft Condition 21 (April 2014) which requires the methods and schedule for ambient monitoring of contaminants of potential concern in air including particulate matter, carbon monoxide, nitrogen dioxide, sulphur dioxide, hydrogen sulphide and volatile organic compounds.	Metro_Vancouver_IR_No._1.1.6.03i	1 - Prior to Construction	Superseded by NEB Condition	52	

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Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X Number)	Additional Comments
332	Environment	Sto:lo Collective	Trans Mountain welcomes the opportunity to discuss infrastructure and capacity for Sto:lo heritage resource management technical involvement as construction monitors, to ensure protection of sites, and to ensure Sto:lo practices are maintained.	Sto:lo Collective Recommendation #54	1 - Prior to Construction	In Progress		
333	Environment	Township of Langley	Trans Mountain will ensure that all construction equipment is free of invasive species, seeds or debris when it arrives on the construction right-of-way. General pipeline construction mitigation measures regarding weeds and vegetative debris that may be applicable to the pipeline throughout all phases of construction are outlined in the Application, Section 7.0 of the Pipeline Environmental Protection Plan (Volume 6B) as well as the Weed and Vegetation Management Plan (Section 14.0 of Appendix C of Volume 6B). These mitigation measures will be implemented, as warranted, by Trans Mountain, its Contractors and subcontractors prior to and during construction.	Langley_IR_No._1.09c	1 - Prior to Construction	Superseded by NEB Condition	45_72	
334	Environment	Tsartlip First Nation	Archaeological heritage resource information received from participating communities will be reviewed in order to confirm mitigation measures including those found in the Environmental Protection Plans (Volume 6B, 6C and 6D).	Tsartlip_FN_IR_No._1, 2.7.1	1 - Prior to Construction	Superseded by NEB Condition	72, 78, 81, 100	
335	Environment	Upper Nicola Band	An Avian Protection Plan will be prepared for the Project that will provide more detail on the potential effects and proposed mitigation measures.	Upper_Nicola_Band_Attachment - Table 1.16f	1 - Prior to Construction	No Longer Applicable		Commitment is no longer applicable, superseded by NEB Ruling No. 33.
336	Environment	Upper Nicola Band	Trans Mountain will develop an Avian Protection Plan using information and best practices outlined by the Avian Power Line Interaction Committee R_No._1.16j (2006, 2012).	Upper_Nicola_Band_I_R_No._1.16j	1 - Prior to Construction	No Longer Applicable		Commitment is no longer applicable, superseded by NEB Ruling No. 33.
337	Environment	Vancouver Fraser Port Authority DBA Port Metro Vancouver	Trans Mountain will complete post-construction noise monitoring at the Westridge Marine Terminal as per NEB Draft Condition No. 57 (April 2014) relating to post-construction noise surveys at select terminals.	PMV_IR_No._1.3.2, Cameron_School_Parc Monitirs_IR_No._1.2.2a, PMV_IR_No._1.3.2, Miller_IR_No._2.03b	5 - Post-Construction Monitoring	Superseded by NEB Condition	80	
338	Environment	NEB	An estimation of old growth areas impacted by the Project will be provided in the first half of 2015 once the construction right-of-way and footprint is further delineated.	NEB_IR_No._2.053e	1 - Prior to Construction	Superseded by NEB Condition	76	
339	Environment	NEB	Appendix M of the Pipeline Environmental Protection Plan will be updated 90 days prior to commencing construction.	NEB_IR_No._1.18e, NEB_IR_No._1.18d	1 - Prior to Construction	Superseded by NEB Condition	72	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources[1] of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition [x] Number	Additional Comments
340	Environment	NEB	Adequate mitigation (e.g., scheduling to avoid periods when birds congregate, protective buffers) will be implemented to reduce the potential project effects on migratory birds.	Technical Update No. 1 and Consultation Update No. 2 Part 5, Part 01, Table 1.6.3-1	2 - During Construction	Superseded by NEB Condition	72, 78, 81	
341	Environment	NEB	Appropriate mitigation (e.g., soil handling, erosion control) and monitoring activities will be implemented during construction to maximize reclamation success. Project-generated garbage or debris will be removed regularly from along the construction right-of-way and facility sites. After the pipeline trench has been backfilled, and once weather and soil conditions permit, cleanup and reclamation activities will start along the disturbed portions of the pipeline right-of-way. This will be done using bulldozers, backhoes, graders and farm equipment, where required. The topsoil or stripping will be replaced, and cross ditches and diversion berms will be installed on moderate and steep slopes to reduce the risk of erosion.	Pre-Application Project Description, p 21.	2 - During Construction	Superseded by NEB Condition	72, 78, 81	
342	Environment	NEB	As part of Trans Mountain's commitment to environmental protection, Trans Mountain will minimize potential adverse impacts to wetlands by repairing any erosion control or restoration features until permanent revegetation is successful.	Technical Update No. 1 & Consultation Update No. 2 - Part 2 Table 1.6.2-1	1 - Prior to Construction		41	Superseded by NEB Condition
343	Environment	NEB	As with all of its construction projects, Trans Mountain will reclaim any areas that are affected by the project. Trans Mountain is committed to reclamation of the pipeline right-of-way and surrounding areas following construction.	Applicable Volume 5B, 3-64	5 - Post-Construction Monitoring			Superseded by Management Plan
344	Environment	NEB	Details of mitigation strategies for Pacific water shrew will be provided with the filing of NEB IR Round 7 responses in Q3 2014.	NEB_IR_No._1.44c	1 - Prior to Construction	Superseded by NEB Condition	44	
345	Environment	NEB	Due to the existing cumulative effects risk for grizzly bear and management guidance to avoid further effects, Trans Mountain will implement mitigation measures to minimize effects on this species (see response to NEB IR No. 1.47 Filing ID A3w9H8).	NEB_F-IR_No._2.034b, NEB_IR_No._2.034b	1 - Prior to Construction	Superseded by NEB Condition	56	
347	Environment	NEB	For acoustic environment, the monitoring results will be filed with the NEB within 6 months of conducting the initial measurements. Measurement programs will be scheduled within the first 6 months of normal operations, but will be weather and activity dependent.	NEB_IR_No._2.067e	5 - Post-Construction Monitoring	Superseded by NEB Condition	141	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
348	Environment	NEB	In the event the schedule changes and clearing activities are planned during the migratory bird restricted activity period, a migratory bird nest sweep will be conducted. In the event an active nest is found, a protective buffer will be established around the nest. The size of the buffer will be influenced by the status of the bird. Typically a 30 m buffer is applied to a songbird nest and a 100 m buffer around waterfowl or raptor nests.	Technical Update No. 1 and Consultation Update No. 2 - Part 5, Part 01 Table 1.6.2-1	1 - Prior to Construction	Superseded by NEB Condition	72, 78, 81	
350	Environment	NEB	The need and methods for a bear den sweep will be discussed with the appropriate regulatory agency in the event construction activity is scheduled to coincide with the period when bears are denning and habitat suitability for denning is high.	NEB_I.R._No._2.037b	2 - During Construction	Superseded by NEB Condition	72, 56	
351	Environment	NEB	To meet Environmental commitments and permit requirements during Project activities, Trans Mountain will implement an Environmental inspection and monitoring program that includes management oversight, on-site environmental inspection, various available Environmental training programs for all on-site personnel and access to other Environmental resources (e.g., wildlife biologists, water quality monitors) on an as needed basis.	Application Volume 6A - 3-1.	6 - Project Lifecycle	Superseded by NEB Condition	72, 78, 81	
352	Environment	NEB	To protect riparian habitat and watersheds, crossings of wetlands and watercourses will be planned during suitable ground and weather conditions, with the consideration for sensitive fish and wildlife timing windows.	Technical Update No. 1 and Consultation Update No. 2 - Part 2 Table 1.6.3-1	2 - During Construction	Superseded by NEB Condition	71, 77, 43	
353	Environment	Sto:lo Collective	Trans Mountain welcomes the opportunity to discuss infrastructure and construction monitors, to ensure protection of sites, and to ensure Sto:lo practices are maintained.	Sto:lo Collective Recommendation #54	1 - Prior to Construction	In Progress		
354	Environment	NEB	Pending project approval, Trans Mountain is committed to consider a conservation offset program for the entire Project that results in a net benefit. TMEP is committed to exceed minimum standards in areas with acknowledged biodiversity values.	NEB_I.R._No._2.042c	1 - Prior to Construction	Superseded by NEB Condition	40, 41, 42, 56, 128, 142, 154, 155, 156, 157	
355	Environment	NEB	Trans Mountain is committed to best practices in reclamation, always striving for opportunities leading to advancement. As with all of its construction projects, Trans Mountain will reclaim any areas that are affected by the Project. Trans Mountain is committed to full reclamation of the pipeline right-of-way and surrounding areas following construction.	Technical Update No. 1 and Consultation Update No. 2 - Part 2 Table 1.6.3-1	6 - Project Lifecycle	Superseded by NEB Condition	72	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
356	Environment	Sto:lo Collective	During the construction phase, Trans Mountain will discuss any unanticipated adverse effects on Sto:lo businesses related to the construction of the Project during the mutually agreed to on-going engagement between Sto:lo and Trans Mountain. Additional mitigation will be developed, as required, if and as such adverse effects are identified.	Sto:lo Collective Recommendation #71	2 - During Construction	In Progress		
357	Environment	NEB	Trans Mountain will conduct a Post Construction Environmental Monitoring (PCEM) program during a period up to the first five complete growing seasons (or during years one, three and five) following commissioning of the Project and as a consequence of conditions that may be attached to the Certificate of Public Convenience and Necessity (CPCN).	Application Volume 1, section 3.1.3.	5 - Post-Construction Monitoring	Superseded by NEB Condition	151	
358	Environment	NEB	Trans Mountain will consult with Fisheries and Oceans Canada (DFO) to determine whether the Pacific Salmon Foundation's multi-year comprehensive 'Salish Sea Marine Survival Project' initiative can also be considered to be a scientifically defensible and useful recovery measure for resident killer whales by restoring an adequate and accessible food supply.	NEB_FIR_No._1.56	1 - Prior to Construction	In Progress		
359	Environment	NEB	Trans Mountain will develop and implement an environmental education program to ensure that all individuals involved in the construction of the Project understand the environmental requirements of the Project and their role and responsibilities with regard to meeting those requirements.	Application Volume 6A_6-1.	2 - During Construction	Superseded by NEB Condition	72, 78, 81	
360	Environment	NEB	Trans Mountain will file Mitigation Plans for Lewis's woodpecker and Williamson's sapsucker with the NEB at least 4 months prior to commencing construction.	NEB_FIR_No._1.45c	1 - Prior to Construction	Superseded by NEB Condition	44	
361	Environment	NEB	Trans Mountain will file Mitigation Plans for Townsend's mole and Pacific giant salamander with the NEB at least 4 months prior to commencing construction.	NEB_FIR_No._1.44d	1 - Prior to Construction	Superseded by NEB Condition	44	
362	Environment	NEB	Trans Mountain will implement a monitoring program to determine the effectiveness of the erosion and sediment control mitigation measures during construction in preventing terrestrial sediment loading into the marine environment.	Application Volume 5A_7-407.	2 - During Construction	Superseded by NEB Condition	81	
363	Environment	NEB	Trans Mountain will implement recommendations from Alberta Culture and SB, Section 7.2.1.3, page 7-10	Application Volume 5B, Section 7.2.1.3, page 7-10	1 - Prior to Construction	Superseded by NEB Condition	100	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
365	Environment	NEB	Trans Mountain will provide advance notification to regulatory authorities responsible for fish and wildlife management with final routing information, including maps, as well as construction schedule information, so they can communicate this information broadly in wildlife and fur management areas. Trans Mountain will also directly notify affected tenure holders so they can select alternate areas for their activities.	Application Volume 5B, 7-108.	1 - Prior to Construction	Superseded by NEB Condition	72,78	
366	Environment	NEB	Trans Mountain will report any rare plants or rare lichens identified to the provincial conservation data centre.	Application Volume 5A, 8-114.	1 - Prior to Construction	Superseded by NEB Condition	40	
367	Environment	NEB	Trans Mountain will work with Environment Canada (EC) and comply with the Migratory Birds Convention Act and Migratory Birds Sanctuary Regulations, as well as any provincial and territorial wildlife agencies related to the project components and impacts. Clearing and pre-construction activities will be conducted outside the minimum migratory bird restricted activity period (RAP) of May 1 to July 31, where practical.  In the event that the schedule changes and clearing activities are planned during the migratory bird RAP, a migratory bird nest sweep will be conducted. In the event that an active nest is found, a protective buffer will be established around the nest. The size of the buffer will be influenced by the status of the bird. Typically a 30 m buffer is applied to a songbird nest and a 100 m buffer is applied around waterfowl or raptor nests.  Recommended mitigation measures are identified in Volume 6B – Pipeline Environmental Protection Plan.	Part 2 – Consultation Update No. 1	1 - Prior to Construction	Superseded by NEB Condition	72	
368	Environment	NEB	Trans Mountain will work with provincial regulatory authorities, tenure holders and other stakeholders to identify opportunities to address potential residual Project effects on caribou habitat.	Application Volume 5A, 7-221.	6 - Project Lifecycle	Superseded by NEB Condition	36,37	
369	Environment	NEB	Trans Mountain will work with the appropriate regulatory authorities to develop a mitigation strategy to address the Project's incremental cumulative effect on grizzly bear in the North Cascades Grizzly Bear Population Unit (GBPU).	Application Volume 5A, 8-151.	6 - Project Lifecycle	Superseded by NEB Condition	56	
370	Environment	NEB	Trans Mountain will work with various provincial and federal agencies with responsibilities related to air emissions from the Project components.	NEB_IR_No._2.027	1 - Prior to Construction	Superseded by NEB Condition	52,53,54,55, 79	
371	Environment	Pro Information Pro Environment United People Network	If herbicide is to be applied in close proximity to a certified organic farm the contractors will be supervised by a qualified environmental professional to ensure that the farms are not affected by the activity. If weeds need to be controlled through a certified organic farm, Kinde Morgan Canada will coordinate an acceptable solution with the landowner/land manager to mitigate the weed concerns.	PIPEUP_IR_No._1.6.3	1 - Prior to Construction	Superseded by NEB Condition	45,72	

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Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
373	Environment	C.G.L.A.P. - Collaborative Group of Landowners Affected by Pipelines	Trans Mountain is committed to systematic and timely communication with farm operators. Based on this communication, detailed biosecurity measures will be developed collaboratively between the farm operator and Trans Mountain.	CGLAP _IR_No._2.8b	1 - Prior to Construction	Superseded by NEB Condition	72	
375	Environment	C.G.L.A.P. - Collaborative Group of Landowners Affected by Pipelines	Trans Mountain will meet with the BC Agricultural Land Commission (ALC) again in the fall of 2014 to review Trans Mountain's commitments to agriculture and obtain further input from the BC Agricultural Land Commission (ALC).	CGLAP _IR_No._2.1a	1 - Prior to Construction	Complete		
377	Environment	Sto:lo Collective	During the construction phase, Trans Mountain will discuss any unanticipated adverse effects on Sto:lo businesses related to the construction of the Project during the mutually agreed to on-going engagement between Sto:lo and Trans Mountain. Additional mitigation will be developed, as required, if and as such adverse effects are identified.	Sto:lo Collective Recommendation #71	2 - During Construction	In Progress		
379	Environment	Sto:lo Collective	Trans Mountain has committed to communicating with local health authorities, including the First Nations Health Authority, on the timing of the Project, duration of stay in the local community, expected number of people coming into the area and onsite health care plans. Trans Mountain is committed to ongoing discussions with the Sto:lo Collective about emerging health issues related to the Project.	Sto:lo Collective Recommendation #79, #80, #81	1 - Prior to Construction	In Progress		
383	Environment	Sto:lo Collective	Trans Mountain has committed to communicating with local health authorities, including the First Nations Health Authority, on the timing of the Project, duration of stay in the local community, expected number of people coming into the area and onsite health care plans. Trans Mountain is committed to ongoing discussions with the Sto:lo Collective about emerging health issues related to the Project.	Sto:lo Collective Recommendation #79, #80, #81	1 - Prior to Construction	In Progress		
388	Environment	Environment Canada	At Westridge Marine Terminal, Trans Mountain will undertake Marine Bird Monitoring as a component of the Post Construction Environmental Monitoring program. Trans Mountain will meet with Environment Canada to discuss the monitoring program.	EC P-I_R_No._1.21	1 - Prior to Construction	Superseded by NEB Condition	151	
406	Environment	NEB	Through the proposed Marine Mammal Protection Program and other regional collaborative initiatives, Trans Mountain commits to implementing mitigation measures that are within its control to implement to manage potential environmental effects (both project-related and cumulative) on marine mammals.	NEB _IR_No._1.38	3 - Prior to Operations	Superseded by NEB Condition	132	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (K) Number	Additional Comments
408	Environment	NEB	Trans Mountain is committed to working with Fisheries and Oceans Canada (DFO), participating Aboriginal communities, Vancouver Fraser Port Authority DBA Port Metro Vancouver and other stakeholders to identify the most appropriate means of offsetting serious harm to marine fish and fish habitat. Trans Mountain will submit a preliminary marine fish habitat offsetting plan to the NEB in Q3 2014.	NEB_IIR_No._1.51	1 - Prior to Construction	Complete		
419	Environment	City of Burnaby	Post-construction monitoring will continue until remediation measures are considered to be effective and issues are resolved in Old Growth Management Areas.	City_Burnaby_IIR_No._1.04.14k	5 - Post-Construction Monitoring	Superseded by NEB Condition	151	
427	Environment	Parcs Canada Agency	The Company's Jasper National Park Operations and Maintenance Environmental Protection Plan will be revised and updated prior to reactivation.	GOC_Parks_IIR_No._1_2.4	1 - Prior to Construction	Complete		
453	Environment	City of Burnaby	Trans Mountain will adopt any additional measures required by the NEB such as those set out in NEB Draft Condition No. 33 of the NEB's Letter ... Draft Conditions and Regulatory Oversight (NEB 2014).	City_Burnaby_IIR_No._1.27.02b	1 - Prior to Construction	Superseded by NEB Condition	80, 141	
456	Environment	Regional District of Fraser-Fort George	Trans Mountain will continue to work with the communities of Valhambut and the Regional District on implementing and enforcing procedures that discourage its regard for the sensitivity of that environment, by its employees and contractors.	RD_of_Fraser_Fort_George_IIR_No._0.4b	1 - Prior to Construction	Superseded by NEB Condition	59	
458	Environment	NEB	The Socio-Economic Effects Monitoring Program will include monitoring indicators related to worker/community interaction and worker conduct.	NEB_IIR_No._1.17d.6	1 - Prior to Construction	Superseded by NEB Condition	13	
459	Environment	NEB	Trans Mountain will consult with key stakeholders [e.g., governments, local/regional service providers, Aboriginal communities, municipalities] regarding the socio-economic effects monitoring framework, indicators to be monitored, methods of reporting, and the level of local/regional interest in participating in socio-economic effects monitoring. The monitoring framework and process will then be finalized and shared publicly.	NEB_IIR_No._1.17d	1 - Prior to Construction	Superseded by NEB Condition	13	
469	Environment	NEB	Trans Mountain is committed to meeting the applicable ambient air quality objectives at the Edmonton Terminal.	NEB_IIR_No._3.019b	4 - Operations	Superseded by NEB Condition	72	
470	Environment	NEB	Trans Mountain will establish a Groundwater Monitoring Program for Albreda Pump Station in 2015. This is scheduled as part of the annual addition to the Groundwater Monitoring Program.	NEB_IIR_No._3.022c.2	1 - Prior to Construction	Complete		
473	Environment	NEB	Trans Mountain commits to produce site-specific mitigation measures for all rare plant, rare lichen and rare ecological community occurrences observed on the final Project footprint.	NEB_IIR_No._3.026	1 - Prior to Construction	Superseded by NEB Condition	40	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition # Number	Additional Comments
474	Environment	NEB	The location of all sensitive vegetation features and their site-specific mitigation measures will be on the Environmental Alignment Sheets (EAS), which will be resubmitted prior to construction. The EAS will illustrate the features and provide guidance to mitigation measures and management plans provided in the Environmental Protection Plan and Management Plans.	NEB_IR_No._3.026	1 - Prior to Construction	Superseded by NEB Condition	40,72	
475	Environment	NEB	The final Reclamation Plan will be completed prior to construction in consultation with BC Parks.	NEB_IR_No._3.026d	1 - Prior to Construction	Superseded by Management Plan		
476	Environment	NEB	Trans Mountain commits to continue the discussions with BC Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) and coordinating OGMA mitigation requirements.	NEB_IR_No._3.027c	1 - Prior to Construction	Superseded by NEB Condition	76	
477	Environment	NEB	Trans Mountain commits to reviewing replacement options for Old Growth Management Areas (OGMAs) if unavoidable adverse effects result from the Project.	NEB_IR_No._3.027	1 - Prior to Construction	Superseded by NEB Condition	76	
478	Environment	NEB	Trans Mountain remains committed to conducting ground-based surveys at all wetlands encountered by the Project prior to construction, where access is available.	NEB_IR_No._3.028a	1 - Prior to Construction	Superseded by NEB Condition	41	
479	Environment	NEB	Trans Mountain will advise the NEB in the event that it is unable to complete surveys of wetlands not previously surveyed prior to construction and will provide the NEB with a summary of its attempts to obtain access.	NEB_IR_No._3.028	1 - Prior to Construction	Superseded by NEB Condition	41	
480	Environment	NEB	Approximately 117 wetlands crossed by the proposed pipeline corridor will be targeted for supplemental surveys prior to construction, subject to land access.	NEB_IR_No._3.028	1 - Prior to Construction	Superseded by NEB Condition	41	
481	Environment	NEB	Trans Mountain has committed to prepare a Mitigation Plan (NEB-F-IR No. 1.44d [Filing ID A32474]), and provide an assessment of Townsend's mole.	NEB_IR_No._3.029c	1 - Prior to Construction	Superseded by NEB Condition	44	
484	Environment	NEB	Trans Mountain will develop and implement Environmental offset projects to focus on parks and protected areas, BC interior grasslands, species at risk and their habitat, aquatic ecosystems, and old growth management areas.	NEB_IR_No._3.036a, NEB_IR_No._3.037	6 - Project Lifecycle	Superseded by NEB Condition	41, 42, 43, 44, 71, 76, 154, 156, 157	
485	Environment	NEB	Trans Mountain is committed to providing a summary of the proposed offset projects to the NEB once they are defined and the necessary approvals, permits to construct and operate in the four proposed BC provincial parks and one recreation area have been granted.	NEB_IR_No._3.037	1 - Prior to Construction	In Progress		

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Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation or Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
486	Environment	NEB	Trans Mountain will include additional site-specific mitigation measures for watercourses identified as critical Nooksack dace and Salish sucker habitat in the final Pipeline Environmental Protection Plan, to be filed with the NEB, at least 90 days prior to construction in accordance with NEB draft condition No. 29.	NEB_IR_No._3.039	1 - Prior to Construction	Superseded by NEB Condition	75	
487	Environment	NEB	Trans Mountain will obtain necessary permits under the Species at Risk Act (SARA) for the salvage of all relevant freshwater fishes.	NEB_IR_No._3.042	1 - Prior to Construction	Superseded by NEB Condition	110	
488	Environment	NEB	Trans Mountain will continue dialogue with all Aboriginal communities, where freshwater species at risk are concerned.	NEB_IR_No._3.042	1 - Prior to Construction	Superseded by NEB Condition	75	
510	Environment	NEB	Spawning surveys will be conducted before and during construction (where practical/feasible) at crossings with high potential spawning habitat, and where spawning exclusion devices (e.g., placement of snow-fence or other matting over spawning substrate) are not already in use.	NEB_IR_No._3.38d.1	1 - Prior to Construction	Superseded by NEB Condition	72, 43	
511	Environment	Natural Resources Canada	Trans Mountain commits to updating the air quality assessments for the Westridge Marine Terminal in 2015 to inform engineering design. Trans Mountain has also committed to Vancouver Fraser Port Authority DBA Port Metro Vancouver that an additional air quality assessment will be prepared when the design engineering has adequately progressed.	Goc_NRCAn_IR_No._2 .01	1 - Prior to Construction	Superseded by NEB Condition	52	
512	Environment	Natural Resources Canada	Trans Mountain has confirmed that they will meet with the Lower Fraser Valley Air Quality Coordinating Committee (LFVACC) in Q1 2015 to develop a work plan for an updated photochemical modelling study that will be completed in Q3 2015.	Goc_NRCAn_IR_No._2 .01, FVRD_IR_No._2.10, Metro_Vancouver_IR_No._2.3.1.	1 - Prior to Construction	Complete		
517	Environment	Natural Resources Canada	Trans Mountain is committed to working with Aboriginal groups and other interested parties to identify the most appropriate means of offsetting serious harm to marine fish and fish habitat.	Goc_NRCAn_IR_No._2 .08	1 - Prior to Construction	In Progress		
518	Environment	Environment Canada	Trans Mountain is committed to meeting federal and provincial water quality guidelines for the protection of aquatic life during all stages of construction.	Goc_EC_IR_No._2.017	2 - During Construction	Superseded by NEB Condition	72, 43	
519	Environment	Environment Canada	If the National Energy Board (NEB) and Fisheries and Oceans Canada (DFO) determine that construction of the Westridge Marine Terminal is likely to result in serious harm to fish, Trans Mountain will implement marine fish habitat offsetting measures to counterbalance this serious harm.	Goc_EC_IR_No._2.017	1 - Prior to Construction	Superseded by NEB Condition	109	

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Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition Number	Additional Comments
520	Environment	Environment Canada	If required through Parks Canada Agency's development permit application process, Trans Mountain will complete further effects assessment for the reactivation activities in accordance with the Parks Canada Directive on implementation of Canadian Environmental Assessment Act, 2012.	GOC_EC_IR_No._2.024 b, GOC_Parks_IR_No._2. 132	1 - Prior to Construction	Complete		
521	Environment	Environment Canada	Upon completion of the in-Line Inspections, Trans Mountain will complete field surveys as needed prior to commencing reactivation activities along the Darfield to Black Pines segment to inform the development of mitigation measures to avoid, reduce and mitigate Project effects on wetlands, vegetation and wildlife species at risk and migratory birds, depending on the extent and nature of the reactivation activities.	GOC_EC_IR_No._2.024	1 - Prior to Construction	Superseded by NEB Condition	72	
522	Environment	Environment Canada	Trans Mountain is committed to the implementation of mitigation to ensure that the Project's contribution to caribou mortality risk is effectively mitigated.	GOC_EC_IR_No._2.026 c	4 - Operations	Superseded by NEB Condition	36, 37	
523	Environment	Environment Canada	Trans Mountain will assess whether length of trenchless crossing can be extended to provide a buffer zone(s) at each crossing site, where practicable for the locations identified in GOC EC IR No. 2.029a.	GOC_EC_IR_No._2.029 b	1 - Prior to Construction	Complete		
524	Environment	Environment Canada	Trans Mountain will provide Environment Canada (EC) with a map and spatial data (i.e. shape files) of the construction footprint within the Project's Caribou Regional Study Area.	GOC_EC_IR_No._2.030	1 - Prior to Construction	Superseded by NEB Condition	36	
525	Environment	Environment Canada	Trans Mountain commits to schedule a meeting with Environment Canada (EC) to review the area of Project overlap/interaction with critical habitat.	GOC_EC_IR_No._2.035	1 - Prior to Construction	Complete		A meeting was held with Environment Canada on October 10, 2014.
526	Environment	Tsawwassen First Nation	Trans Mountain will continue to consult with BC Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) in regards to Oregon spotted frog.	GOC_EC_IR_No._2.036	1 - Prior to Construction	Superseded by NEB Condition	44	
527	Environment	Environment Canada	If cliff/caves that may provide suitable habitat for spotted bat (i.e., vertical cliff faces with warm aspects and heights of approximately 40 m to 400 m) or known caves occur within the Project Footprint, Trans Mountain will contact BC Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) to discuss the appropriate survey method for determining if the cliff/cave is used by spotted bat.	GOC_EC_IR_No._2.037	1 - Prior to Construction	In Progress		
528	Environment	Environment Canada	Trans Mountain will conduct spotted owl surveys in the Sowqua Spotted Owl Wildlife Habitat Area in 2015 and 2016.	GOC_EC_IR_No._2.038	1 - Prior to Construction	Complete		Spotted owl surveys were completed in 2015.
529	Environment	Environment Canada	Trans Mountain will finalize reclamation strategies before construction and will determine seed mixes in consultation with the appropriate Crown land managers.	GOC_EC_IR_No._2.045	1 - Prior to Construction	Superseded by NEB Condition	72	

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Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition Number	Additional Comments
534	Environment	Environment Canada	Information on mortality and collision events during construction will be compiled by the Environmental Monitor and included, as applicable, in post-construction monitoring reports for the Westridge Marine Terminal.	GoC_EC_IR_No._2.050	1 - Prior to Construction	Superseded by NEB Condition	81	
535	Environment	Environment Canada	Trans Mountain is committed to the goal of "no net loss" of wetland function and plans to meet this goal through mitigation measures, post-construction monitoring and, if warranted, compensation.	GoC_EC_IR_No._2.050	5 - Post-Construction Monitoring	Superseded by NEB Condition	41	
538	Environment	Environment Canada	Trans Mountain will provide CALMET model input files for Burnaby Terminal Regional Study Area as requested.	GoC_EC_IR_No._2.059	1 - Prior to Construction	Complete		
544	Environment	Environment Canada	Trans Mountain will ensure all construction right-of-way clearing activities and site reclamation activities are in accordance with the Plant Protection Act – Balsam Woolly Adelgid (B.C. Reg. 414/92).	GoC_EC_IR_No._2.122	2 - During Construction	In Progress		
548	Environment	Environment Canada	Trans Mountain has committed to further environmental impact analysis in accordance with Parks Canada Directive on implementation of CEA 2012 following the results of the in-line inspections of the 24-inch pipeline.	GoC_EC_IR_No._2.132	1 - Prior to Construction	Superseded by NEB Condition	72	
550	Environment	Environment Canada	Trans Mountain is committed to working with Parks Canada in developing and implementing a set of Management Objectives / Desired End Results with appropriate monitoring and performance criteria to ensure ecological integrity management objectives of Jasper National Park are achieved during reactivation.	GoC_EC_IR_No._2.137	1 - Prior to Construction	Superseded by Management Plan		
552	Environment	Environment Canada	Trans Mountain will meet the requirements of the Parks Canada directive on human burials in National Park and National Historic Sites settings: Management Directive 2.3.1: Human Remains, Cemeteries and Burial Grounds (Parks Canada 2000).	GoC_EC_IR_No._2.141	1 - Prior to Construction	Complete		
554	Environment	Environment Canada	Trans Mountain is willing to consider proposals from Parks Canada Agency to contribute to a positive legacy or net benefit to Jasper National Park and Mount Robson Provincial Park.	GoC_EC_IR_No._2.148	1 - Prior to Construction	Complete		
557	Environment	Environment Canada	Wetland function post-construction monitoring will be conducted to review the area of disturbance and determine whether implemented mitigation measures were successful and to identify any wetlands where remedial measures should be implemented to assist with the wetland function recovery, if warranted.	GoC_EC_IR_No._2.052	1 - Prior to Construction	Superseded by NEB Condition	41	
562	Environment	BC Nature and Nature Canada	Trans Mountain commits to consulting with appropriate regulatory agency BC_Nature_Nature_Co_a_IR_No._2.38 if there are scheduling conflicts related to the sensitive periods for amphibians and the construction schedule.	BC_Nature_Nature_Co_a_IR_No._2.38	2 - During Construction	In Progress		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
578	Environment	City of Abbotsford	The Reclamation Management Plan for the Project will be developed prior to construction and will incorporate re-vegetation principles for riparian areas in BC that are included in the Riparian Areas Regulation (RAR) revegetation guidelines (BC Ministry of Environment 2012).	City_of_Abbotsford_IR_No._2.2.07d, City_of_Abbotsford_IR_No._2.2.09d	1 - Prior to Construction	Superseded by NEB Condition	71	
595	Environment	Adams Lake Indian Band	Trans Mountain will develop a marine water and sediment sampling plan for use during dredging (if dredging is required).	ALIB_IR_No._2.03.01	1 - Prior to Construction	Superseded by NEB Condition	35	
596	Environment	Adams Lake Indian Band	Environmental Sampling (if required) will be conducted by a Qualified Environmental Professional (QEP)-led crew.	ALIB_IR_No._2.03.02b	6 - Project Lifecycle	Superseded by NEB Condition	72	
597	Environment	Adams Lake Indian Band	Trans Mountain is committed to further engagement with the Adams Lake Indian Band (ALIB) to discuss ideas regarding an offset plan (fish habitat offset plan) should it be required.	ALIB_IR_No._2.03.11	2 - During Construction	Superseded by NEB Condition	110	
598	Environment	Adams Lake Indian Band	Trans Mountain will provide Draft species-specific mitigation plans to Adams Lake Indian Band (ALIB) for review.	ALIB_IR_No._2.05.5	1 - Prior to Construction	Complete		
599	Environment	Upper Nicola Band	Trans Mountain is committed to the review of the information on hunting, trapping, gathering or fishing in the area of the Coldwater and Nicola Rivers upon receipt for consideration in project planning and continued engagement with Upper Nicola to discuss mitigation measures to minimize potential impacts. Trans Mountain notes that the construction planning schedule requires that this policy be received no later than May 1, 2015.	Upper_Nicola_Band_I_R_No._2(c).02	1 - Prior to Construction	Complete		
601	Environment	C.G.I.A.P. – Collaborative Group of Landowners Affected by Pipelines	Trans Mountain will consult with the Collaborative Group of Landowners Affected by Pipelines (CGLAP) in developing a list of suitable candidates for an Agricultural Monitor for the Fraser Valley.	CGLAP_IR_No._2.5c	1 - Prior to Construction	Scoping		
617	Environment	City of Burnaby	Wildlife field work for the Westridge Delivery Pipelines will be completed in 2015 in selected areas where habitat disturbance will occur associated with the proposed entry and exit points of the tunnel.	City_Burnaby_IR_No._2.074a	1 - Prior to Construction	Complete		
618	Environment	City of Burnaby	An Archaeological Impact Assessment (AIA) will also be conducted on the proposed entry and exit points for the tunnel in 2016.	City_Burnaby_IR_No._2.074a	1 - Prior to Construction	Superseded by NEB Condition	100	
619	Environment	City of Burnaby	If historic contamination is discovered on City lands, Trans Mountain commits to notifying the City of Burnaby and providing a detailed remedial strategy.	City_Burnaby_IR_No._2.079b	1 - Prior to Construction	Superseded by NEB Condition	46	

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Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
620	Environment	City of Burnaby	Trans Mountain plans to engage with the City of Burnaby regarding the development of an Air Emissions Management Plan for the Westridge Marine Terminal per NEB Draft Condition 19 (August 2015).	City_Burnaby_IR_No._1.04.14h, City_Burnaby_IR_No._1.28.01c, City_Burnaby_IR_No._2.085, City_Burnaby_IR_No._2.086, FVRD_IR_No._2.19, Metro_Vancouver_IR_No._1.1.6.03i;	1 - Prior to Construction	Superseded by NEB Condition	52	
623	Environment	City of Burnaby	If the Burrard Streets Alternative Alignment is selected, Trans Mountain commits to ensuring that Heron Creek is not crossed and silt fencing will be installed to manage run-off to ensure that this creek is not adversely affected.	City_Burnaby_IR_No._2.094	7 - No Longer Applicable	No Longer Applicable		This commitment is no longer applicable as the Burnaby Mtn tunnel is the proposed route.
624	Environment	City of Burnaby	In the event that the proposed alternative pipeline corridor for the Westridge Delivery Lines is selected for construction, a search for heron nests will be completed in the area of Heron Creek and the Burrard Inlet Conservation Area.	City_Burnaby_IR_No._2.095	1 - Prior to Construction	Complete		A search for heron nests was completed in June 2014.
630	Environment	City of Burnaby	Trans Mountain will discuss the need for additional wildlife field work specific to species of special conservation status outside of areas mapped as critical habitat by Environment Canada (EC) with BC Ministry of Forests, Lands and Natural Resource Operations (MFLNR).	City_Burnaby_IR_No._2.115	1 - Prior to Construction	Complete		
635	Environment	City of Burnaby	Any disturbance to existing riparian vegetation or compensation areas will be re-established by Trans Mountain during the construction and reclamation phases of the project.	City_Burnaby_IR_No._2.136	2 - During Construction	Superseded by NEB Condition	71	
647	Environment	The City of Edmonton	Trans Mountain will work with the City of Edmonton to determine where landscaping will be required in areas of the Whitemud Extension pipeline corridor affected by construction.	City_of_Edmonton_IR_No._2.2.3b	1 - Prior to Construction	Complete		
653	Environment	City of Kamloops	Trans Mountain will review the new City of Kamloops Park Management Plan (if complete) prior to reclamation planning.	City_of_Kamloops_IR_No._2.05	2 - During Construction	Complete		
658	Environment	City of New Westminster	Trans Mountain will discuss potential overlap of the sensitive life-history phases of species with special conservation status with the appropriate regulatory authority with respect to the Brunette Conservation Area.	City_New_Westminster_IR_No._2.A.3	1 - Prior to Construction	Superseded by NEB Condition	43	
660	Environment	City of New Westminster	Trans Mountain is committed to exploring ways to help the further recovery of aquatic ecosystems in the Brunette River Conservation Area that may be affected by TMEP.	City_New_Westminster_IR_No._2.A.3.vii	1 - Prior to Construction	Superseded by NEB Condition	43, 71, 75	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Scope(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (k) Number	Additional Comments
690	Environment	Metis Nation of Alberta Gunn Metis Local 55	Trans Mountain commits to not disturbing any known burial sites or cemeteries registered with Service Alberta under the Cemeteries Act or registered with Alberta Culture and Tourism under the Historical Resources Act during the Project.	Gunn_Métis_Local_55 _IR_No._2.26	2 - During Construction	Scoping		
691	Environment	Metis Nation of Alberta Gunn Metis Local 55	Metis Nation of Alberta Gunn Metis Local 55 will be informed and consulted regarding all sacred sites that may be discovered during construction of the Project through their traditional territory.	Gunn_Métis_Local_55 _IR_No._2.29	2 - During Construction	Superseded by NEB Condition	72	
692	Environment	Metis Nation of Alberta Gunn Metis Local 55	In the event a heritage site is discovered, a qualified Heritage Resource specialist will develop, if warranted, an appropriate mitigation plan in consultation with the lead Environmental Inspector(s), the lead Activity Inspector(s) and the Construction Manager, and/or appropriate regulatory authority, as well as the applicable Aboriginal communities.	Gunn_Métis_Local_55 _IR_No._2.30	2 - During Construction	Superseded by NEB Condition	72	
693	Environment	Natural Resources Canada	Trans Mountain has previously committed to update its assessment of air quality as the Project's engineering design nears or reaches completion. If this air quality assessment reveals further increases in the concentrations of Project-related air pollutants over populated areas under the Base, Application or Cumulative Cases, Trans Mountain will update the Human Health risk assessment (HHRA). If Trans Mountain updates the HHRA, it would undertake to submit the updated assessment as a condition of approval on any Certificate that the NEB may grant.	GoCF-IR_No._2.01	1 - Prior to Construction	In Progress		
694	Environment	Peters Band	Trans Mountain will retain Environmental Inspectors and Monitors with an understanding of the Contaminated Sites Regulation (B.C. Reg. 4/2014) and sampling protocols (BC Ministry of Environment 2009). If camping is required it will be conducted under the direction of a Contaminated Sites Approved Professional (CSAP).	Peters_Band_IR_No..._2(b).2.5(a)	2 - During Construction	Superseded by NEB Condition	46,72	
695	Environment	Metis Nation of Alberta Gunn Metis Local 55	Trans Mountain is committed to the development of the Reclamation Management Plan. The Reclamation Management Plan will also be developed in consultation with landowners, Aboriginal communities and the applicable Crown land managers.	Gunn_Métis_Local_55 _IR_No._2.48	1 - Prior to Construction	Superseded by NEB Condition	72	
696	Environment	Horse Lake First Nation	Trans Mountain is committed to retain Aboriginal Monitors and is developing the details of Aboriginal Monitor participation through continued engagement with Aboriginal groups.	Horse_Lake_FN_IR_No._2.1	2 - During Construction	Superseded by NEB Condition	98	
699	Environment	Horse Lake First Nation	Trans Mountain will consult with Horse Lake First Nation during the development of the detailed Reclamation Management Plan.	Horse_Lake_FN_IR_No._2.4b	1 - Prior to Construction	Complete		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
702	Environment	Peters Band	Trans Mountain commits to having Inspectors and Monitors responsible for identifying and mitigating Environmental effects, including contamination.	Peters_Band_IR_No._2(b).2.5.(b)	2 - During Construction	Superseded by NEB Condition	72, 46	
706	Environment	Peters Band	Trans Mountain will use chemical monitoring of groundwater on Peters Band reserve lands in areas where the contaminated sites review identifies a risk of contamination and there are relevant accessible water wells available.	Peters_Band_IR_No._2(b).2.5.(b)	1 - Prior to Construction	Superseded by NEB Condition	46, 72	
707	Environment	Living Oceans Society	Trans Mountain will provide the requested input files used to perform the CALMET/CALPUFF dispersion modelling for the Marine Air Quality and Greenhouse Gas/Marine Transportation Technical Report for the Trans Mountain Expansion Project, Supplemental Report No. 2 (December 2014) (Marine Supplemental Report No. 2) (Filing ID A44548) directly to Living Oceans on a USB stick (Living_Oceans_IR_No._2.1 - Attachment 1).	Living_Oceans_IR_No._2.1	1 - Prior to Construction	Complete		
708	Environment	Living Oceans Society	Notwithstanding the limitations due to confidentiality and intellectual property outlined above, in addition to the name lists, run scripts, and emission descriptions, Trans Mountain agrees to supply the files that are specific to the estimated Project emissions at the time of the Application, outside of the National Energy Board filing process. Trans Mountain will send these files directly to the Intervenor on a USB stick (Living_Oceans_IR_No._2.2 - Attachment 1).	Living_Oceans_IR_No._2.2	1 - Prior to Construction	Complete		
709	Environment	Living Oceans Society	Any available wind data inputs will be provided directly to the intervenor on a USB stick as the file format does not lend itself to filing with the National Energy Board (NEB). Trans Mountain will provide these files to the NEB and any intervenor on request.	Living_Oceans_IR_No._2.3	1 - Prior to Construction	Complete		
710	Environment	Township of Langley	Trans Mountain Pipeline ULC (Trans Mountain) commits to pre-construction sampling of water wells that are 10 m deep or less within 150m of the proposed right-of-way.	Langley_IR_No._2.08.a	1 - Prior to Construction	Superseded by NEB Condition	93	
716	Environment	Township of Langley	Trans Mountain is committed to removing all construction materials during final clean-up and reclamation.	Langley_IR_No._2.12.b	2 - During Construction	Superseded by NEB Condition	72	
719	Environment	Township of Langley	Trans Mountain is prepared to discuss with the Township of Langley the need for and costs of additional inspection to ensure potential issues related to erosion control and sedimentation are managed during construction.	Langley_IR_No._2.13.e	1 - Prior to Construction	In Progress		
720	Environment	Township of Langley	Trans Mountain commits to meet with the Township of Langley to further discuss the concerns regarding riparian vegetation.	Langley_IR_No._2.14.b	1 - Prior to Construction	Superseded by NEB Condition	71	
725	Environment	Township of Langley	Trans Mountain commits to working with the Township of Langley to address site specific mitigation measures regarding the three (3) municipal parks affected by the proposed pipeline prior to construction in the parks.	Langley_IR_No._2.18.b	1 - Prior to Construction	In Progress		

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Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition #	Additional Comments
751	Environment	Upper Nicola Band	Should additional unmapped fish-bearing watercourses be identified during survey or a route walk prior to construction, Trans Mountain will assess these watercourses for the potential for Serious Harm.	Upper_Nicola_Band_1_R_No._2(c)_06.e	1 - Prior to Construction	Superseded by NEB Condition	72	
754	Environment	Katzie First Nation	Provide Katzie First Nation with a 1:5,000 scale map (Reference i), map number 201501, MAP_TERA_HER_00669_REV0 of all known archaeological sites located within 500 m of the Project Footprint, including sites DgRp-10, DgRq-17, DgRq-35, DgRq-36 and DgRq-43 if they are not already captured.	Katzie_FN_IR_No._2_2_02	1 - Prior to Construction	Complete		
755	Environment	Katzie First Nation	Wildlife surveys within Surrey Bend Regional Park will be conducted once land access is granted.	Katzie_FN_IR_No._2_2_04	1 - Prior to Construction	Superseded by NEB Condition	7	
758	Environment	Upper Nicola Band	Trans Mountain is committed to applying appropriate mitigation strategies to watercourses that provide fish habitat, the Project will incorporate standard measures outlined by the Fisheries and Oceans Canada (DFO) Measures to Avoid Causing Harm to Fish and Fish Habitat and, if warranted, alternative or supplemental mitigation measures.	Upper_Nicola_Band_1_R_No._2(c)_07.e	2 - During Construction	Superseded by NEB Condition	43	
763	Environment	NEB	Trans Mountain will take a proactive approach to Burnaby Mountain tunneling operations and associated activities and will require all machinery and equipment to be maintained and operated to manufacturer's standards and to the regulatory conditions of air emissions and construction permits.	NEB_IR_No._4_3c	1 - Prior to Construction	Superseded by NEB Condition	72	
765	Environment	Province of British Columbia	Trans Mountain will accurately reflect the location of drinking water supply sources within 100m of the pipeline, its facility, or areas that could be impacted from a release as modelled in Application Volume 7, Section 3 (Filing ID A354V5) based on information available from Provincial and Municipal permitting agencies.	Province_BC_IR_No._2_11	1 - Prior to Construction	Superseded by NEB Condition	93	
768	Environment	NEB	Trans Mountain will restore disturbed riparian zones.	NEB_IR_No._4_7a	2 - During Construction	Superseded by NEB Condition	71	
773	Environment	NEB	Trans Mountain will include a Dust Mitigation Plan as a component of the Fugitive Emissions Management Plans which must be submitted to the National Energy Board (NEB) at least four months prior to commencing construction in accordance with NEB Draft Condition (April 2014) 20 (Westridge Marine Terminal) of the NEB's Letter.	NEB_IR_No._4_03a.4	1 - Prior to Construction	Superseded by NEB Condition	52	
777	Environment	NEB	With respect to mitigation measures, Trans Mountain will align with the broader strategies identified in the Recovery Strategy for Nooksack dace and Salish sucker.	NEB_IR_No._4_07	1 - Prior to Construction	Superseded by NEB Condition	75	

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Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
780	Environment	NEB	Trans Mountain will ensure that adequate riparian setbacks are maintained for all watercourse crossings and that the amount of riparian vegetation removal is limited during construction.	NEB_R_No._4_7c	2 - During Construction	Superseded by NEB Condition	71, 72	
784	Environment	NEB	Trans Mountain will revise additional site-specific mitigation measures for watercourses identified as critical Nooksack dace to include similar riparian reserve measures proposed for Salish sucker which will be included in final Pipeline Environmental Protection Plan, to be filed with the NEB at least 90 days prior to construction in accordance with NEB draft condition No. 29.	NEB_R_No._4_07	1 - Prior to Construction	Superseded by NEB Condition	75	
792	Environment	NEB	Trans Mountain will include additional site-specific mitigation measures for watercourses identified as critical Nooksack dace and Salish sucker habitat in the final Pipeline Environmental Protection Plan, to be filed with the NEB, at least 90 days prior to construction in accordance with NEB draft condition No. 29.	NEB_R_No._4_07	1 - Prior to Construction	Superseded by NEB Condition	75	
796	Environment	NEB	Although no Oregon spotted frog were identified during the March 2015 surveys, Trans Mountain will continue to work with BC Ministry of Forests, Lands and Natural Resource Operations (MLNRD) to discuss mitigation measures for Oregon spotted frog.	NEB_R_No._4_10	1 - Prior to Construction	Superseded by NEB Condition	44	
798	Environment	NEB	Trans Mountain will update Table 12 of the Pipeline Environmental Protection Plan (EPP) to more clearly link the mitigation measures already listed in the EPP to Western barn owl.	NEB_R_No._4_10	1 - Prior to Construction	Superseded by NEB Condition	44	
800	Environment	NEB	Trans Mountain will prepare Mitigation Plans for the Oregon forest snail and Oregon spotted frog.	NEB_R_No._4_10	1 - Prior to Construction	Superseded by NEB Condition	44	
803	Environment	NEB	Trans Mountain will specifically update Table 12 in the Pipeline Environmental Protection Plan (EPP), to link mitigation measures already provided in the EPP to species with early candidate critical habitat of the American badger ( <i>jeffersonii</i> subspecies), Western barn owl and Western screech owl ( <i>macroura</i> and <i>kennicottii</i> subspecies).	NEB_R_No._4_10	1 - Prior to Construction	Superseded by NEB Condition	44	
804	Environment	Upper Nicola Band	Soil inspection site 71BH will be added to the revised Environmental Alignment Sheets when they are submitted in advance of construction.	Upper_Nicola_Band_I_R_No._2.17b	1 - Prior to Construction	Superseded by NEB Condition	72	
806	Environment	Upper Nicola Band	Buntzen and shallow Buntzen soils were identified during a supplemental soil survey. These soil units will be mapped in relation to the project footprint on the Environmental Alignment Sheets that will be issued prior to the commencement of construction.	Upper_Nicola_Band_I_R_No._2.24c	1 - Prior to Construction	Superseded by NEB Condition	72	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
807	Environment	Upper Nicola Band	Detailed reclamation strategies for sensitive areas will be finalized before construction and appropriate seed mixes and seeding strategies will be developed in consultation with the land owner or appropriate regulatory agency.	Upper_Nicola_Band_I_R_No_2.24d	1 - Prior to Construction	Superseded by NEB Condition	72, 78, 81	
808	Environment	Upper Nicola Band	Trans Mountain will consult with the Upper Nicola Band First Nation regarding their concerns during the development of detailed reclamation planning and prior to the finalization of the Reclamation Management Plan.	Upper_Nicola_Band_I_R_No_2.24f	1 - Prior to Construction	Superseded by Management Plan		
809	Environment	NEB	Trans Mountain will consult with the appropriate regulatory authority to discuss project routing in relation to early candidate critical habitat and recommend field visit to review the presence of biophysical attributes of key critical habitat.	NEB_IR_No_4_10	1 - Prior to Construction	Superseded by NEB Condition	44	
811	Environment	Upper Nicola Band	The requested Watercourse Crossing Summary Table will be updated closer to construction, should additional unmapped watercourses be identified and assessed during the survey or a final route walk.	Upper_Nicola_Band_I_R_No_2.31e	1 - Prior to Construction	Superseded by NEB Condition	43	
812	Environment	Upper Nicola Band	Estimates for riparian disturbance will be assessed and updated, should additional unmapped watercourses be identified during survey or a route walk prior to construction.	Upper_Nicola_Band_I_R_No_2.31f	1 - Prior to Construction	Superseded by NEB Condition	71	
813	Environment	Upper Nicola Band	Should additional unmapped fish-bearing watercourses be identified during survey or a route walk prior to construction, Trans Mountain will assess these watercourses for the potential for Serious Harm.	Upper_Nicola_Band_I_R_No_2.31i	1 - Prior to Construction	Superseded by NEB Condition	72	
815	Environment	Fraser Valley Regional District	Trans Mountain will work with the Fraser Health Authority (FHA), regarding Project construction activities to identify and develop resolutions to potential and specified concerns for the protection of drinking water supplies in the Fraser Valley Regional District (FVRD).	FVRD_IR_No_2.02	1 - Prior to Construction	Superseded by NEB Condition	94	
821	Environment	Fraser Valley Regional District	Trans Mountain commits to consult with the Lower Fraser Valley Air Quality Coordinating Committee commencing in Q1 2015 in the development of the Community Multi-Scale Air Quality (CMAQ) modelling plan for additional CMAQ modelling.	FVRD_IR_No_2.10_GoC_NRCAN_IR_No_2_01_Metro_Vancouver_IR_No_2.3.1_FVRD_IR_No_2.18	1 - Prior to Construction	Complete		
826	Environment	Fraser Valley Regional District	Trans mountain will engage Fraser Valley Regional District during the development of the Dust Management plan.	FVRD_IR_No_2.18	1 - Prior to Construction	Superseded by NEB Condition	52, 79, 85	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
827	Environment	Fraser Valley Regional District	Trans Mountain will begin engagement with the Fraser Valley Regional District regarding the development of an Air Emissions Management Plan for the Westridge Marine Terminal.	FVRD_IR_No._2.19, Metro_Vancouver_IR_No._1.1.6.03i, City_Burnaby_IR_No._2.085, City_Burnaby_IR_No._2.086, City_Burnaby_IR_No._1.04.1.4h, City_Burnaby_IR_No._1.28.D.1.c	1 - Prior to Construction	Superseded by NEB Condition	52	
828	Environment	Fraser Valley Regional District	Trans Mountain will consult with Fraser Valley Regional District (FVRD) on the Fugitive Emissions Management Plan for those portions pertaining to Sumas Tank Terminal within FVRD.	FVRD_IR_No._2.20	1 - Prior to Construction	Superseded by NEB Condition	54	
830	Environment	North Shore NOPE	Trans Mountain has committed to undertaking updated air quality assessments to inform engineering design.	NSNOPE_IR_No._2.03c	1 - Prior to Construction	Complete		
831	Environment	North Shore NOPE	Trans Mountain is committed to demonstrating ongoing ability to meet the applicable ambient air quality objectives at the Westridge Marine Terminal for the final engineering design of the facilities.	NSNOPE_IR_No._2.03c	6 - Project Lifecycle	Superseded by NEB Condition	52	
832	Environment	North Shore NOPE	Trans Mountain intends to continue air quality modelling in 2015 to determine tank design, updated vapour control specifications, and any other related design change, using an iterative process.	NSNOPE_IR_No._2.03c	1 - Prior to Construction	Complete		
833	Environment	Natural Resources Canada	Trans Mountain will update the human health risk assessment (HTRA) for the Burrard Inlet area if revisions to air dispersion modelling based on final or near final engineering design result in increases in the concentrations of air pollutants over populated areas for the Base, Application and Cumulative cases.	GoC_NRCan_F_IR_No._2.01	3 - Prior to Operations	In Progress		
846	Environment	Strata NW 313	In addition to construction management personnel, Trans Mountain will have construction and Environmental inspectors in place during construction to ensure Environmental Protection Plan (EPP) measures are implemented as needed and as committed to.	Strata_NW313_IR_No._2.03b	2 - During Construction	Superseded by NEB Condition	72, 78, 81	
853	Environment	St̄k̄eml̄ip̄semic Te Secwep̄emic	Trans Mountain will implement mitigation to ensure Project personnel are prohibited from fishing on Jacko Lake during construction activities and efforts will be made to provide continuous access to Jacko Lake.	SSN_IR_No._2.10.01	1 - Prior to Construction	In Progress		
855	Environment	St̄k̄eml̄ip̄semic Te Secwep̄emic	Trans Mountain will ensure that an appropriately qualified professional will conduct any nest sweeps or species-specific surveys on St̄k̄eml̄ip̄semic Te Secwep̄emic Nation (SSN) territory.	SSN_IR_No._2.32	1 - Prior to Construction	Superseded by NEB Condition	72, 44	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
856	Environment	Sikemipsemic Te Secwepemic	Trans Mountain will include Sikemipsemic Te Secwepemic Nation (SSN) in discussions with BC Ministry of Forests, Lands and Natural Resource Operations if sensitive species are found within SSN territory.	SSN_IR_No._2.32	1 - Prior to Construction	In Progress		
857	Environment	Samson Cree Nation	Trans Mountain is committed to continued engagement with Aboriginal groups when the Reclamation Management Plan is being finalized.	Samson_Cree_Nation_IR_No._2.1.4a	1 - Prior to Construction	Superseded by NEB Condition	72, 78, 81	
858	Environment	Samson Cree Nation	The Reclamation Management Plan will be developed in consultation with Aboriginal communities, landowners and applicable Crown land managers.	Samson_Cree_Nation_IR_No._2.1.4c	1 - Prior to Construction	Superseded by NEB Condition	72, 78, 81	
860	Environment	Squamish Nation	Trans Mountain will conduct a crab salvage program prior to the commencement of dredging (if dredging is required).	Squamish_Nation_IR_No._2.05.p	2 - During Construction	Superseded by NEB Condition	35	
867	Environment	New Democratic Party of Canada	To ensure that the sub tidal rock reef is successful and meets Fisheries and Oceans Canada's (DFO's) policy of maintaining or improving the productivity and sustainability of commercial, recreational or Aboriginal (CRA) Fisheries, Trans Mountain will monitor the reef annually for five years.	NDP_IR_No._2.1.7.b	5 - Post-Construction Monitoring	Superseded by NEB Condition	109	
873	Environment	Cheam First Nation and Chawathil First Nation	Cheam First Nation and Chawathil First Nation are jointly conducting independent, third-party Traditional Land and Resource Use (TLRU) studies. Upon receipt of the reports, Trans Mountain will incorporate the results into project planning and the Environmental Alignment Sheets as appropriate.	Cheam_and_Chawathil_IR_No._2(b).1.3.b	1 - Prior to Construction	Superseded by NEB Condition	97	
877	Environment	Vancouver Fraser Port Authority DBA Port Metro Vancouver	If it is identified during the development of the construction specifications for Westridge Marine Terminal (WMT) that abrasive blasting or coating will be required over water, Trans Mountain will consult with Vancouver Fraser Port Authority DBA Port Metro Vancouver Environmental Programs Department staff to develop appropriate controls. Any controls will be included in the WMT Environmental Protection Plan (EPP).	PMV_IR_No._2.05a	1 - Prior to Construction	Superseded by NEB Condition	81	
879	Environment	Vancouver Fraser Port Authority DBA Port Metro Vancouver	At all times during construction, Trans Mountain will have construction management and inspection team located at Westridge Marine Terminal (WMT), responsible for monitoring and enforcing compliance with the Environmental Protection Plan (EPP). It is anticipated that during high activity periods, a dedicated environmental inspector will be assigned to the construction management and inspection team.	PMV_IR_No._2.05a	2 - During Construction	Superseded by NEB Condition	81	
880	Environment	Vancouver Fraser Port Authority DBA Port Metro Vancouver	If an impact or hydraulic hammer is used for in-water pile installation, Trans Mountain will monitor both underwater pressure levels (measured in kPa) and underwater sound levels (measured in dB) during pile driving.	PMV_IR_No._2.07a	2 - During Construction	Superseded by NEB Condition	81	

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition [x] Number	Additional Comments
881	Environment	Vancouver Fraser Port Authority DBA Port Metro Vancouver	Trans Mountain will consult with Vancouver Fraser Port Authority DBA Port Metro Vancouver (PMV) if disposal of sediment on PMV lands or water is proposed.	PMV_IIR_No._2.07c	1 - Prior to Construction	Superseded by NEB Condition	35	
882	Environment	Vancouver Fraser Port Authority DBA Port Metro Vancouver	Trans Mountain will consult Vancouver Fraser Port Authority DBA Port Metro Vancouver and Environment Canada (EC), in relation to disposal options, when the volume and chemical and physical properties of contaminated sediment are known.	PMV_IIR_No._2.08	1 - Prior to Construction	Superseded by NEB Condition	35	
884	Environment	Vancouver Fraser Port Authority DBA Port Metro Vancouver	Trans Mountain will endeavour to meet with Vancouver Fraser Port Authority DBA Port Metro Vancouver (PMV) in spring 2015 to discuss the proposed pre-construction survey and other aspects of the Preliminary Marine Fish Habitat Offsetting Plan. Trans Mountain will ensure that PMV is afforded the opportunity to be included in any upcoming discussions with Fisheries and Oceans Canada. If Trans Mountain proceeds with construction of the proposed subtidal reef, PMV will be copied on the compliance and effectiveness monitoring reports, and will be included in the planning for any required corrective actions that might arise out of the monitoring.	PMV_IIR_No._2.14	1 - Prior to Construction	Superseded by NEB Condition	109	
885	Environment	Vancouver Fraser Port Authority DBA Port Metro Vancouver	Trans Mountain will implement marine fish habitat offsetting measures to offset any serious harm to fish that are part of, or support, commercial, recreational or Aboriginal (CRA) fisheries.	PMV_IIR_No._2.15a	1 - Prior to Construction	Superseded by NEB Condition	109	
888	Environment	NEB	Trans Mountain will develop an Aboriginal Monitors plan.	Pre-Application Project Description, p 44, 45.	1 - Prior to Construction	Superseded by NEB Condition	98	
889	Environment	Vancouver Fraser Port Authority DBA Port Metro Vancouver	Trans Mountain commits to working with Vancouver Fraser Port Authority DBA Port Metro Vancouver (PMV) to develop an Air Management Plan that is consistent with the requested level of detail from PMV as part of PMV's permit application process.	PMV_IIR_No._2.24	1 - Prior to Construction	Superseded by Management Plan		
890	Environment	Vancouver Fraser Port Authority DBA Port Metro Vancouver	Trans Mountain commits to providing emissions and dispersion modelling results for a Future without Project Scenario, consistent with the requested pollutants and averaging periods from Vancouver Fraser Port Authority DBA Port Metro Vancouver (PMV), as part of PMV's permit application process.	PMV_IIR_No._2.25	1 - Prior to Construction	Superseded by Management Plan		
891	Environment	Vancouver Fraser Port Authority DBA Port Metro Vancouver	Trans Mountain commits to providing annual emissions for the requested contaminants in the Base Case, Application Case, Project Effects and Cumulative Case, and consistent with the requested level of detail, as part of Vancouver Fraser Port Authority DBA Port Metro Vancouver's permit application process.	PMV_IIR_No._2.25	1 - Prior to Construction	Superseded by NEB Condition	52, 79	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
892	Environment	Vancouver Fraser Port Authority DBA Port Metro Vancouver	Trans Mountain commits to providing maximum predicted concentrations for all applicable averaging periods for the Background, Burnaby Terminal, Westridge Marine Terminal, Marine and Total, consistent with the requested level of detail and methodology from Vancouver Fraser Port Authority DBA Port Metro Vancouver (PMV), as part of the PMV permit application process.	PMV_IR_No._2.25	1 - Prior to Construction	Complete		
894	Environment	Sixw'owx̱məl First Nation	In the event of a leak or rupture from a pipeline or facility within Shxw'owx̱məl First Nation (SFN) Traditional Territory, Trans Mountain Pipeline UIC (Trans Mountain) will follow the remedial steps outlined in the National Energy Board (NEB) Remediation Process guide (2011) to ensure that the groundwater contamination is remediated to applicable remediation standards.	SFN_IR_No._2.5.1e2	3 - Prior to Operations			Superseded by Management Plan
895	Environment	Sto:lo Collective	All sensitive resources identified on the Environmental Alignments Sheets and Environmental tables within the immediate vicinity of the right-of-way will be clearly marked before the start of clearing. Trans Mountain will:	Sto_lo_Collective_IR_No._2.1.2	1 - Prior to Construction			Superseded by NEB Condition
			<ul style="list-style-type: none"> <li>provide Aboriginal communities with the anticipated construction schedule and proposed pipeline corridor maps, a minimum of two weeks prior to the start of construction in the vicinity of their respective communities.</li> </ul>					72
902	Environment	Metro Vancouver	Trans Mountain gathered new information in 2014 and will conduct additional measurements of volatile organic compounds (VOCs) emissions during the tanker loading at the Westridge Marine Terminal for a variety of crude oil products in 2015.	Metro_Vancouver_IR_No._2.1.03	1 - Prior to Construction	Complete		
903	Environment	Metro Vancouver	The Google Earth file including all modeled buildings and stacks in Burnaby Terminal and Westridge Marine Terminal for Base Case will be provided directly to Metro Vancouver on a USB stick. Trans Mountain will also provide these files to the National Energy Board and any other intervenor on request.	Metro_Vancouver_IR_No._2.1.08b	1 - Prior to Construction	Complete		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
904	Environment	Metro Vancouver	Trans Mountain has committed to be under all applicable ambient air quality objectives and they are committed to mitigate to the appropriate emission levels and stack design to achieve those predicted concentrations. Trans Mountain has also committed to resolve the variability in the Volatile Organic Compound (VOC) measurements and refine the HYSYS model by Q2, 2015 by: <ul style="list-style-type: none"> <li>• undertaking additional sampling surveys at Westridge Marine Terminal;</li> <li>• selecting the most reliable VOC dataset;</li> <li>• re-running the calibrated HYSYS model to recalculate Project VOC emissions;</li> <li>• re-running the CALPUFF dispersion model to demonstrate that predicted concentrations will continue to be less than the ambient objectives; and,</li> <li>• matching the needed level of emission control with the appropriate equipment package.</li> </ul>	Metro_Vancouver_IR_No._2.1.10a	1 - Prior to Construction	Complete		
908	Environment	Metro Vancouver	Trans Mountain will conduct annual combustion efficiency testing of the Westridge Marine Terminal existing and proposed VCL.	Metro_Vancouver_IR_No._2.1b	4 - Operations	Superseded by NEB Condition	53	
909	Environment	Metro Vancouver	Trans Mountain will consult with the Lower Fraser Valley Air Quality Coordinating Committee commencing in Q1 2015 in the development of the Community Multi-Scale Air Quality (CMAQ) modelling plan for additional CMAQ modelling.	Metro_Vancouver_IR_No._2.3.1, GoC_NRCan_IR_No._0.1, FVRD_IR_No._2.10.	1 - Prior to Construction	Complete		
910	Environment	Metro Vancouver	Reclamation at fish-bearing watercourses, including riparian areas, will be conducted to stabilize the bed and banks, riparian areas and approach slopes.	Metro_Vancouver_IR_No._2.7.2a	2 - During Construction	Superseded by NEB Condition	71, 72	
913	Environment	Metro Vancouver	Trans Mountain, in cooperation with local communities, Aboriginal groups, regulatory authorities, and other stakeholders is committed to exploring ways through the Environmental stewardship program to help further recovery of fish habitat that may be affected by TMEP activities in or near the Brunette Fraser Greenway.	Metro_Vancouver_IR_No._2.7.6b	1 - Prior to Construction	Superseded by NEB Condition	75	
915	Environment	Metro Vancouver	Trans Mountain, is willing to work in cooperation with Metro Vancouver as well as other local government, Aboriginal groups, regulatory authorities, and other stakeholders to explore ways to help further the recovery of aquatic ecosystems and species at risk that may be affected by TMEP activities in Surrey Bend Park, near Brunette River Greenway.	Metro_Vancouver_IR_No._2.7.6c	1 - Prior to Construction	Superseded by NEB Condition	7	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
916	Environment	Metro Vancouver	Trans Mountain will provide the requested CALMET input files, which were used in the Terrestrial assessment, directly to Metro Vancouver (and the National Energy Board or any other intervenor upon request) via USB memory stick.	Metro Vancouver_IR_No._21.04d	1 - Prior to Construction	Complete		
917	Environment	Metro Vancouver	Trans Mountain will provide the requested 12 monthly CALMET input files, which were used in the Marine assessment, directly to Metro Vancouver (and the National Energy Board or any other intervenor upon request) via USB memory stick.	Metro_Vancouver_IR_No._21.04e	1 - Prior to Construction	Complete		
918	Environment	Metro Vancouver	Trans Mountain will provide the requested 5 seasonal geo-data files, which were used in the Terrestrial assessment, directly to Metro Vancouver (and the National Energy Board or any other intervenor upon request) via USB memory stick.	Metro_Vancouver_IR_No._21.04f	1 - Prior to Construction	Complete		
919	Environment	Metro Vancouver	Trans Mountain will provide the requested data files directly to Metro Vancouver via USB memory stick.	Metro_Vancouver_IR_No._21.04g	1 - Prior to Construction	Complete		
929	Environment	Simon Fraser University	Trans Mountain is committed to meeting the applicable ambient air quality objectives at the Westridge Marine Terminal and this is the primary criterion for determining tank design and vapour control configurations.	SFU_I_R_No._25.10.1	1 - Prior to Construction	Superseded by NEB Condition	52, 53	
930	Environment	Simon Fraser University	Resource specific mitigation measures, as appended to the Facilities Environmental Protection Plan (EPP), will be provided in the issued for Construction version of the Facilities EPP.	SFU_I_R_No._25.18.1	1 - Prior to Construction	Superseded by NEB Condition	78	
936	Environment	Tsawout First Nation	Trans Mountain will consider additional issues and concerns, traditional use sites, or features identified through ongoing engagement with Tsawout First Nation for incorporation into Project planning under the guidance of existing marine transport regulations and mitigation recommendations made to date.	Tsawout_FN_I_R_No._21.5b	1 - Prior to Construction	In Progress		
943	Environment	Peters Band	Peters Mountain will monitor areas of known and potential contamination during construction. In the event contamination is discovered during construction, the Contamination Discovery Contingency Plan will be implemented (Appendix B of the Pipeline Environmental Protection Plan [Volume 6B; Filing ID A35253] and Facilities Environmental Protection Plan [Volume 6C; Filing ID A35256]).	Peters_Band_I_R_No._21(b).2.4b	2 - During Construction	Superseded by NEB Condition	46, 72, 78, 81	
944	Environment	Peters Band	Trans Mountain will be updating the preliminary inventories and re-assessing potentially contaminated areas prior to construction based on the final project footprint.	Peters_Band_I_R_No._21(b).2.4	1 - Prior to Construction	Superseded by NEB Condition	46	
945	Environment	Peters Band	Peters Mountain is willing to investigate the use of chemical monitoring of groundwater should contamination be discovered during construction of the Project.	Peters_Band_I_R_No._21(b).2.5b	3 - Prior to Operations	Superseded by NEB Condition	46, 72	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	additional Comments
947	Environment	Peters Band	Herbicide application will be monitored shortly after treatment for effectiveness of the treatment and impact on the environment.	Peters_Band_IR_No._2(b), 2.5c	6 - Project Lifecycle	Superseded by NEB Condition	45	
949	Environment	Peters Band	In the event of groundwater contamination caused by the Trans Mountain Pipeline system, KMC will work with the leadership of the Peters Band to identify surplus capacity from other drinking water sources in the area, while suitable interim water supply replacement alternatives are established and implemented.	Peters_Band_IR_No._2(b), 3.12	6 - Project Lifecycle	Superseded by Management Plan		
951	Environment	Georgia Strait Alliance	Trans Mountain will consult with potentially affected communities, Aboriginal groups, local and regional authorities, and service providers regarding the Socio-Economic Effects Monitoring Plan.	Georgia_Strait_Alliance_IR_No._2(b),12c	1 - Prior to Construction	Superseded by NEB Condition	13	
1,291	Environment	City of Burnaby	Trans Mountain commits to field-verifying the status of the heron colony near Westridge Marine Terminal prior to construction, in either 2014 or 2015.	City_Burnaby_F-IR_No._1,27,08b	1 - Prior to Construction	Complete		
1,312	Environment	Fraser Valley Watersheds Coalition	Trans Mountain commits to working cooperatively to plan restoration where any disturbance of a Fraser Valley Watershed Coalition restoration project is required.	FVWC_C-IR_No._14,3	6 - Project Lifecycle	Scoping		
1,328	Environment	Brian Kingman	Mitigation for raptor nests on the Kingman property will include the following: <ul style="list-style-type: none"> <li>• Avoid the timing window for red-tailed hawk (January 26 to August 10) and bald eagle (January 5 to August 31) if possible.</li> <li>• In the event, clearing and construction activity will occur within this timing window, a site visit will be conducted to determine the status of the nest (i.e., active or inactive), to confirm the species of raptor, and the location of the nest relative to the proposed pipeline right-of-way.</li> <li>• In the event an active raptor nest is found, a Nest Management Plan addressing various mitigation (including nest monitoring during the breeding period) is recommended.</li> </ul>	Kingman_B_IR_No._1,3a	2 - During Construction	In Progress		
1,329	Environment	Brian Kingman	Trans Mountain will conduct a site visit to determine the status of the nest (i.e., active or inactive), to confirm the species of raptor, and the location of the nest relative to the proposed pipeline right-of-way.	Kingman_B_IR_No._1,3a	1 - Prior to Construction	In Progress		
1,394	Environment	Natural Resources Canada	Trans Mountain will commit to re-visiting the Human Health Risk Assessment (HHRA), if the final engineering design results in material increases to the predicted concentrations due to the project and these changes could reasonably affect human health.	GoC_NRCan_IR_No._2,01	1 - Prior to Construction	In Progress		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
1.433	Environment	C.G.I.A.P - Collaborative Group of Landowners Affected by Pipelines	Trans Mountain will retain an independent Professional Agrologist to lead the post-construction Environmental monitoring program and assist in determining crop yields and quality. Trans Mountain will select a qualified professional agrologist with experience in assessment of crops that will be encountered in the Fraser Valley on farm lands affected by pipeline construction. Potential candidates for the position will require qualifications that include: Registered Professional Agrologist with experience in construction methods for linear utility projects, familiarity with the crops and agricultural conditions of the Fraser Valley, and experience in crop monitoring techniques.	CGIAP_IR_No._1.4c	5 - Post-Construction Monitoring	Scoping		
1.471	Environment	Val Vers; Metro Vancouver; New Democratic Party of Canada; NEB	Three months prior to the start of pile installation, a draft Marine Mammal Protection Program will be developed and submitted to the National Energy Board (NEB) for review. This draft will include further details on construction mitigation and the monitoring program, as well as an update on the status of the marine transportation collaborative initiatives, including a summary of all consultation activities to date, and planned 'next steps'. Copies will also be made available to appropriate regulatory authorities, Aboriginal communities, and other interested stakeholders for comment. The Marine Mammal Protection Program will be living document and, therefore, may go through multiple iterations over the life of the Project as the various programs develop over time; all updates will be filed with the NEB.	NEB IR No. 1.56, Metro_Vancouver_IR_No._1.15.07.1, NDP_IR_No._1.1.8f, Vers_V_IR_No._1.2	1 - Prior to Construction	In Progress	132	Superseded by NEB Condition
1.576	Environment	Cedar Springs Strata Corporation	Trans Mountain will restore the proposed pipeline right-of-way to pre-construction grades and profiles to the extent practical to maintain natural drainage patterns.  Trans Mountain will revegetate disturbed areas with a native seed mix and sediment fencing, berms, mulch, matting, etc.) to minimize any soil erosion.  Trans Mountain will seed portions of the construction right-of-way that form part of the permanent easement of the pipeline with a native seed mix and maintained in an early seral vegetative state until the pipeline is abandoned.	Cedar_Springs_Strata_Corporation_Preliminary_IR_No._1.03c	2 - During Construction	In Progress		

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
1,601	Environment	Sto:lo Collective	A copy of the draft Archaeological Impact Assessment (AIA) final report will be forwarded in confidence to the Sto:lo Collective for review, comment and proposed edits before submission of the report to British Columbia Ministry of Forests, Lands and Natural Resource Operations (BC MFNRO) Archaeology Branch. Once accepted by BC MFNRO Archaeology Branch, a copy of the final AIA report will be forwarded in confidence to the Sto:lo Collective.	Sto:lo Collective Attachment - Table 3a	1 - Prior to Construction	Complete		
1,612	Environment	Sto:lo Collective	As part of the workshop series described in the response to Recommendation 2, Trans Mountain will offer a focused workshop to review the draft Environmental Protection Plan (EPP) and Environmental Alignment Sheets (EAS). Trans Mountain will submit up to date versions of the EPP and EAS to Sto:lo representatives.	Sto:lo Collective Recommendation #3	1 - Prior to Construction	In Progress		
1,616	Environment	Sto:lo Collective	As part of the workshop series described in the response to Recommendation 2 Trans Mountain will include the subjects of aquatics and water crossings.	Sto:lo Collective Recommendation #9, #21	1 - Prior to Construction	Scoping		
1,620	Environment	Sto:lo Collective	Where water quality monitoring fails to meet the parameters of established guidelines and is not in compliance with regulatory requirements, Trans Mountain will report the incident to Sto:lo representatives within the requested timeframe.	Sto:lo Collective Recommendation #11	2 - During Construction	In Progress		
1,621	Environment	Sto:lo Collective	Trans Mountain remains committed to ongoing engagement with Sto:lo representatives to discuss the inclusion of existing Sto:lo knowledge into the updated EPPs for the Project.	Sto:lo Collective Recommendation #12	1 - Prior to Construction	In Progress		
1,622	Environment	Sto:lo Collective	Trans Mountain's procurement team and Chief Environmental Inspector will discuss the requirements and existing capacity (e.g. qualified monitoring personnel and services) with the Sto:lo representatives.	Sto:lo Collective Recommendation #13, #41, #42	3 - Prior to Operations	In Progress		
1,625	Environment	Sto:lo Collective	If clearing in Old Growth Management Areas (OGMAs) within the S'ólh Temékw becomes an approved construction requirement, Trans Mountain will discuss Sto:lo's desire to salvage cedar with the OGMA regulator and the terms for commercial harvest will be negotiated.	Sto:lo Collective Recommendation #28	1 - Prior to Construction	In Progress		
1,627	Environment	Sto:lo Collective	Trans Mountain welcomes the opportunity to discuss the development and operation of businesses and/or greenhouses that can be used to propagate native plants.	Sto:lo Collective Recommendation #33	1 - Prior to Construction	In Progress		
1,628	Environment	Sto:lo Collective	Trans Mountain will discuss the opportunity for Sto:lo participation in pre-construction weed surveys.	Sto:lo Collective Recommendation #35	1 - Prior to Construction	In Progress		
1,629	Environment	Sto:lo Collective	Trans Mountain will provide advance notification of planned herbicide application to the Sto:lo representatives.	Sto:lo Collective Recommendation #37	6 - Project Lifecycle	In Progress		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
1,630	Environment	Sto:lo Collective	Trans Mountain will continue to engage Sto:lo representatives through all phases of the Project. Vegetation monitoring is part of the Post Construction Environmental Monitoring (PEM) program and vegetation re-establishment will be compared to a similar reference plant community located adjacent to, or within, the vicinity of the construction right-of-way and pre-construction conditions.	Sto:lo Collective Recommendation #38, 39	5 - Post-Construction Monitoring	In Progress		
1,634	Environment	Sto:lo Collective	Trans Mountain will recognize places names (such as on Project maps, signs and fencing) during the construction of the Project.	Sto:lo Collective Recommendation #45	2 - During Construction	In Progress		
1,635	Environment	Sto:lo Collective	Trans Mountain will develop and implement an environmental education program to ensure that all personnel working on the construction of the Project are informed of the location of known Traditional Land Use (TLU) sites.	Sto:lo Collective Recommendation #49	1 - Prior to Construction	In Progress		
1,636	Environment	Sto:lo Collective	Trans Mountain welcomes the opportunity to discuss the establishment of infrastructure and capacity for Sto:lo to implement on-going processes of air and water quality monitoring.	Sto:lo Collective Recommendation #53	1 - Prior to Construction	In Progress		
1,637	Environment	Sto:lo Collective	Trans Mountain welcomes the opportunity to discuss infrastructure and capacity for Sto:lo heritage resource management technical involvement as construction monitors, to ensure protection of sites, and to ensure Sto:lo practices are maintained.	Sto:lo Collective Recommendation #54	1 - Prior to Construction	In Progress		
1,648	Environment	Sto:lo Collective	During the construction phase, Trans Mountain will discuss any unanticipated adverse effects on Sto:lo businesses related to the construction of the Project, during the mutually agreed to on-going engagement between Sto:lo and Trans Mountain. Additional mitigation will be developed, as required, if and as such adverse effects are identified.	Sto:lo Collective Recommendation #71	2 - During Construction	In Progress		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
1,651	Environment	Sto:lo Collective	As noted in the response to NEB IR No. 1.1.7d1 (Filing ID A3W9H8), Trans Mountain will develop a Project-specific policy pertaining to substance abuse. The overarching goal of the policy will be to assist the Project in maintaining a safe and productive work environment for all workers and the public, and to minimize pressure on regional medical, social and police services related to alcohol and drug related incidents. As noted in the Socio-Economic Management Plan in Appendix C of Volume 6B of the Application, Trans Mountain will adhere to a policy of no tolerance of use or being under the influence of illicit drugs or alcohol during work hours. The policy will also outline guidance and expectations for workers related to medication which may impair their ability to competently carry out job requirements. As noted in the Socio-Economic Management Plan, Trans Mountain will develop mandatory minimum driving standards that will include the prohibition of drug and alcohol influence while operating motor vehicles.	Sto:lo Collective Recommendation #75, #78	1 - Prior to Construction	In Progress		
1,652	Environment	Sto:lo Collective	As discussed in the response to NEB IR No. 1.1.7d1 (Filing ID A3W9H8), Trans Mountain will develop policies and/or guidance in the following areas, related to limiting adverse interactions between Project workers and local communities:	Sto:lo Collective Recommendation #75, #78	2 - During Construction	Complete		
1,653	Environment	Sto:lo Collective	<ul style="list-style-type: none"> <li>• the use of local recreational, social, and retail facilities and services, including outdoor recreation areas, in smaller construction hub communities;</li> <li>• the use of local and regional medical and social services.</li> <li>• the use of firearms, hunting, or fishing by Project workers.</li> <li>• after-hours worker conduct.</li> <li>• damage to property.</li> <li>• conduct in parks and protected areas.</li> <li>• respectful behaviour/harassment.</li> </ul>	Sto:lo Collective Recommendation #75, #78	2 - During Construction	Complete		
1,655	Environment	Sto:lo Collective	Trans Mountain has committed to communicating with local health authorities, including the First Nations Health Authority, on the timing of the Project, duration of stay in the local community, expected number of people coming into the area and onsite health care plans. Trans Mountain is committed to ongoing discussion with the Sto:lo Collective about emerging health issues related to the project.	Sto:lo Collective Recommendation #79, #80, #81	1 - Prior to Construction	In Progress		

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Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
1,658	Environment	Sto:lo Collective	Trans Mountain will include the worker Code of Conduct, which will contain a number of areas related to the protection of public health issues in the Worker Accommodation strategy, to be filed with the NEB for approval, at least 6 months prior to construction.	Sto:lo Collective Recommendation #86	1 - Prior to Construction	In Progress		
1,804	Environment	NEB	Trans Mountain has also committed to developing additional steps for the preservation of the topsoil on 'Arrow Ecovillage' organic farm in cooperation with the landowners and land users, as well as the Organic Certification Board.	Revised Final Argument s. 7.2.1.2 p237	1 - Prior to Construction	In Progress		
1,947	Environment	Sto:lo Collective	Trans Mountain will develop a Code of Conduct for employees and Contractors that provides guidance and policies on appropriate and inappropriate worker behaviour and community interactions.	Sto:lo Collective Recommendation #86	1 - Prior to Construction	In Progress		
1,960	Environment	BC Ministry of Forests Lands and Natural Resource Operations (MFLNRO)	Trans Mountain will ensure that the damage caused to sensitive alpine environments at Clemina Creek due to ATV use will be part of the Level 1 orientation to all project personnel as an example of what is unacceptable and subject to disciplinary action.. An important part of the environmental orientation will be discussing potential impacts to sensitive features in the Project area, communicating the project code-of-conduct requirements and detailing the "Discipline" and "Consequence of Worker Non-Compliance" measures described in Section 7 of the Environmental Protection Plan (EPP). Trans Mountain will implement the discipline and non-compliance measures if Project workers are responsible for environmental damage.	BC MFLNRO P-IR No. 2.1.0	1 - Prior to Construction	Superseded by NEB Condition	72, 56	
2,122	Environment	Matsqui First Nation	Trans Mountain commits to use a Matsqui member as an environmental monitor in Matsqui Traditional Territory.	Matsqui First Nation Letter dated October 2, 2015 to Margaret Mears item b.	2 - During Construction	Scoping		
2,125	Environment	Matsqui First Nation	Trans Mountain will deliver a stand alone list of actions and commitments to the Matsqui Lands Manager no later than 90 days before construction. This document will list the actions to avoid, mitigate and compensate for Project effects that will be binding on Kinder Morgan Canada (KMC) as a necessary element of the Matsqui First Nation Environmental Assessment.	Matsqui First Nation Letter dated October 2, 2015 to Margaret Mears item c3	1 - Prior to Construction	Complete		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
2,191	Environment	BC Nature and Nature Canada	To reduce any potential environmental effects associated with the Environmental Field Studies Program in Surrey Bend Provincial Park, Trans Mountain will implement the mitigative measures: • No new clearing of trees will be undertaken in the park. • The sites will be accessed by existing roads/trails or by boat to reduce potential environmental effects. Vehicles will access the site only if a suitable access road exists, otherwise, the site will be accessed by foot or by boat, launched from the nearest feasible location. • The activities and locations will be scheduled in succession for each discipline to the extent feasible to reduce the duration of the Program and, subsequently, the potential disturbance to wildlife or recreational users in the immediate area. • If fish species determination is required then electrofishing equipment or snorkel/mask will be used. There will be no lethal fish sampling from any watercourse assessment sites. • An appropriate spill kit will be carried in the boat and/or truck in the unlikely event of an accidental leak. Refuelling and storage of fuel and other petroleum products will occur at a minimum distance of 100m away from any waterbody. • Crews will ensure all equipment and vehicles that arrive on site are clean and free of vegetation to prevent the spread of weeds. • Crews will clean all equipment between visiting different sites to prevent	BC_Nature_Nature_Cd7_aIR_No_1.16i-Attachment 1 (Research Proposal - Surrey Bend Regional Park)	7 - No Longer Applicable	No Longer Applicable		Commitment is no longer applicable as route now avoids Surrey Bend Regional Park as per NEB Condition 7.
2,256	Environment	NEB			NEB_R_No_6.12	1 - Prior to Construction	In Progress	
2,259	Environment	NEB			NEB_R_No_6.13	1 - Prior to Construction	In Progress	Trans Mountain will ensure additional steps for the preservation of the topsoil on this organic farm will be developed in cooperation with the landowners and land users and their organic certification boards. Request: Please describe the mitigation measures that Trans Mountain proposes to address Yarrow Ecovillage's concerns]

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
2,260	Environment	NEB	Trans Mountain will ensure a statistically valid sample of soils will be taken prior to construction and before resprading topsoil at Yarrow Ecovillage. Trans Mountain will ensure this sample will be tested for metal concentrations to ensure that there has been no metal contamination of the soil due to pipeline construction activity.	NEB_IIR_No._ 6.13	1 - Prior to Construction	In Progress		
2,282	Environment	NEB	Trans Mountain will install an air monitoring station at the Sumas Terminal by the end of 2014.	Part 2 - Public Consultation Update No.1	1 - Prior to Construction	Complete		
2,379	Environment	NEB	Trans Mountain will obtain real time flow measurements immediately prior to commencing any mid-sized and large open-cut crossing using the isolation methodology. If flow volumes are within the threshold limits for the respective isolation methodology and the weather forecast (typically a 2 to 5 day forecast) is favourable, the crossing will then be initiated. If flow volumes exceed the threshold limits for isolation or the weather forecast is unfavourable, a decision will then be made to either wait for flows to subside and/or a favourable weather window (if an available biological window remains) or implement the contingency methodology process as required.	Reply Evidence 14.1 Selection of Primary Watercourses Crossing Method - p2 - line 25	2 - During Construction	Scoping		
2,380	Environment	NEB	Trans Mountain will conduct streamflow measurements immediately before the planned construction period. At crossings where the measured discharge is sensible larger than its predicted value, Trans Mountain will ensure the pipeline engineers will either delay construction or implement the contingency crossing method.	Reply Evidence 14.3 Hydrotechnical Hazard Assessment - p4 - line 41	2 - During Construction	Scoping		
2,476	Environment	NEB	Trans Mountain will invite aboriginal groups to participate in Environmental Protection Plan (EPP) workshops where mitigation measures will be discussed.	Reply Evidence 42.4 Human Occupancy and Resources Use p.42-3 line 23	1 - Prior to Construction	Complete		
2,497	Environment	Lyackson First Nation; Tsawout First Nation	Trans Mountain is committed to hosting a regional Environmental Protection Plans (EPPs) workshop to discuss mitigation measures. Tsawout First Nation, and Lyackson First Nation will be invited to attend.	Reply Evidence 57.5 Marine Use p.57.9 line 13	1 - Prior to Construction	Complete		
2,519	Environment	Adams Lake Indian Band	Trans Mountain will be hosting regional workshops along the proposed Project corridor to discuss the Environmental Protection Plan (EPP) and Emergency Management (EM). Adams Lake Indian Band (ALIB) will be invited to participate in collaboration with other Aboriginal groups located in the region. Trans Mountain is committed to continued engagement with ALIB to discuss the Project and the potential Project related effects on ALIB.	Reply Evidence 7.1 Adams Lake Indian Band - p2 - line 11	1 - Prior to Construction	Complete		

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
2,520	Environment	Asini Wachi Nehiyawak Traditional Band	Trans Mountain will be hosting regional workshops along the proposed Project corridor to discuss the Environmental Protection Plan (EPP) and Emergency Management (EM). Asini Wachi Nehiyawak Traditional Band (AWNTB) will be invited to participate in collaboration with other Aboriginal groups located in the region. Trans Mountain is committed to continued engagement with AWNTB to discuss the Project and the potential Project related effects on AWNTB.	Reply Evidence 7.2 Asini Wachi Nehiyawak Traditional Band - p3 - line 3	1 - Prior to Construction	Complete		
2,522	Environment	Coldwater Indian Band	Trans Mountain will be hosting regional workshops along the proposed Project corridor to discuss the Environmental Protection Plan (EPP) and Emergency Management (EM); Coldwater Indian Band (CIB) will be invited to participate in collaboration with other Aboriginal groups located in the region. Trans Mountain is committed to continued engagement with CIB to discuss the Project, including routing options, and the potential Project related effects on CIB.	Reply Evidence 7.4 Coldwater Indian Band - p5 - line 21	1 - Prior to Construction	Complete		
2,523	Environment	Cowichan Tribes	Trans Mountain will be hosting regional workshops along the proposed Project corridor to discuss the Environmental Protection Plan (EPP) Cowichan Tribes (CT) will be invited to participate in collaboration with other Aboriginal groups located in the region. As outlined in its IR response to Natural Resources Canada (NRCan) (Filing ID A49AG1, PDF page 3) on July 14, 2015, CT expects consultation on a number of issues to continue after the NEB hearing process has concluded; Trans Mountain is committed to continued engagement with CT to discuss the Project and the potential Project related effects on CT.	Reply Evidence 7.5 Cowichan Tribes - p5 - line 25	1 - Prior to Construction	Complete		
2,524	Environment	Katzie First Nation	Trans Mountain will be hosting regional workshops along the proposed Project corridor to discuss the Environmental Protection Plan (EPP) and Emergency Management (EM). Katzie First Nation (KFN) will be invited to participate in collaboration with other Aboriginal groups in the region. Project mitigation measures will be reviewed including those that will be utilized to minimize Project related effects as identified in the KFN Traditional Land Use (TLU) study. Trans Mountain is committed to continued engagement with KFN to discuss the Project and the potential Project related effects on KFN.	Reply Evidence 7.6 Katzie First Nation - p6 - line 5	1 - Prior to Construction	Complete		

Commitment ID	Team Responsible for Commitments	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
2,526	Environment	Lyackson First Nation	Trans Mountain will be hosting regional workshops along the proposed Project corridor to discuss the Environmental Protection Plan (EPP); Lyackson First Nation (LYFN) will be invited to participate in collaboration with other Aboriginal groups located in the region. Trans Mountain is committed to continued engagement with LYFN to discuss the Project and the potential Project related effects on LYFN.	Reply Evidence 7.7 Lyackson First Nation p6 - line 25	1 - Prior to Construction	Complete		
2,527	Environment	Lyackson First Nation	Trans Mountain acknowledges an outstanding commitment to meet with Lyackson First Nation (LYFN) to discuss the mitigation measures associated with the Project as related to the Lyackson Use and Occupancy Mapping Study (LUOMS).	Reply Evidence 7.7 Lyackson First Nation p6 - line 18	1 - Prior to Construction	Complete		
2,528	Environment	Matsqui First Nation	Trans Mountain will be hosting regional workshops along the proposed Project corridor to discuss the Environmental Protection Plan (EPP) and Emergency Management (EM). Matsqui First Nation (MFN) will be invited to participate in collaboration with other Aboriginal groups located in the region. Trans Mountain is committed to continued engagement with MFN to discuss the Project and the potential Project related effects on MFN.	Reply Evidence 7.8 Matsqui First Nation - p6 - line 37	1 - Prior to Construction	Complete		
2,530	Environment	Metis Nation of Alberta Gunn Metts Local 55	Trans Mountain will be hosting regional workshops along the proposed Project corridor to discuss the Environmental Protection Plan (EPP) and Emergency Management (EM). Metis Nation of Alberta Gunn Metts Local 55 (GML) will be invited to participate in collaboration with other Aboriginal groups located in the region. Trans Mountain is committed to continued engagement with GML to discuss the Project and the potential Project related effects on GML.	Reply Evidence 7.9 Metis Nation of Alberta Gunn Metts Local 55 - p7 - line 21	1 - Prior to Construction	Complete		
2,533	Environment	Musqueam Indian Band	Trans Mountain will be hosting regional workshops along the proposed Project corridor to discuss the Environmental Protection Plan (EPP) and Emergency Management (EM). Musqueam Indian Band (MIB) will be invited to participate in collaboration with other Aboriginal groups located in the region. Trans Mountain is committed to continued engagement with MIB to discuss the Project and the potential Project related effects on MIB.	Reply Evidence 7.12 Musqueam Indian Band - p8 - line 31	1 - Prior to Construction	Complete		
2,534	Environment	Nooaitch Indian Band	Trans Mountain will be hosting regional workshops along the proposed Project corridor to discuss the Environmental Protection Plan (EPP) and Emergency Management (EM). Nooaitch Indian Band (NIB) will be invited to participate in collaboration with other Aboriginal groups located in the region. Trans Mountain is committed to continued engagement with NIB to discuss the Project and the potential Project related effects on NIB.	Reply Evidence 7.13 Nooaitch Indian Band p9 - line 10	1 - Prior to Construction	Complete		

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
2,535	Environment	Sx̱ólo Collective	Trans Mountain will be hosting regional workshops along the proposed Project corridor to discuss the Environmental Protection Plan (EPP) and Emergency Management (EM). Sx̱ólo will be invited to participate in collaboration with other Aboriginal groups located in the region. Project mitigation measures will be reviewed including those that will be utilized to minimize Project related effects as identified in the integrated Cultural Assessment (ICA) Report. Trans Mountain is committed to continued engagement with Sx̱ólo to discuss the Project and the potential Project related effects on Sx̱ólo.	Reply Evidence 7.15 Sx̱ólo Collective - p10 - line 38	1 - Prior to Construction	In Progress		
2,538	Environment	Squamish Nation	Trans Mountain will be hosting regional workshops along the proposed Project corridor to discuss the Environmental Protection Plan (EPP) and Emergency Management (EM). Squamish Nation will be invited to participate in collaboration with other Aboriginal groups. Trans Mountain is committed to continued engagement with Squamish Nation (SN) to discuss the Project and the potential Project related effects on SN.	Reply Evidence 7.17 Squamish Nation - p12 - line 23	1 - Prior to Construction	In Progress		
2,539	Environment	S̱ek̓emlupsemic Te Secwepemc	Trans Mountain will be hosting regional workshops along the proposed Project corridor to discuss the Environmental Protection Plan (EPP) and Emergency Management (EM). S̱ek̓emlupsemic Te Secwepemc (SSN) will be invited to participate in collaboration with other Aboriginal groups. Trans Mountain is committed to continued engagement with SSN to discuss the Project and the potential Project related effects on SSN.	Reply Evidence 7.18 S̱ek̓emlupsemic Te Secwepemc - p12 - line 1	1 - Prior to Construction	Complete		
2,540	Environment	Sẕuminus First Nation	Trans Mountain will be hosting regional workshops to discuss the Environmental protection Plan (EPP), and Sẕuminus First Nation (Sẕuminus) will be invited to participate in collaboration with other Aboriginal groups. Trans Mountain is committed to continued engagement with Sẕuminus to discuss the Project and the potential Project related effects on Sẕuminus.	Reply Evidence 7.19 Sẕuminus First Nation - p12 - line 15	1 - Prior to Construction	Complete		
2,542	Environment	Tsawout First Nation	Trans Mountain will be hosting regional workshops to discuss the Environmental protection Plan (EPP), and Tsawout First Nation (TWFN) will be invited to participate in collaboration with other Aboriginal groups. Trans Mountain is not able to commit to a community specific forum with TWFN at this time. Trans Mountain is committed to continued engagement with TWFN to discuss the Project and the potential Project related effects on TWFN	Reply Evidence 7.21 Tsawout First Nation - p13 - line 24	1 - Prior to Construction	Complete		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Implementation Status	Superseded by NEB Condition (x) Number	Additional Comments
2,544	Environment	Tsawassen First Nation	Trans Mountain will be hosting regional workshops along the proposed Project corridor to discuss the Environmental Protection Plan (EPP) and Emergency Management (EM). Tsawassen First Nation (TFN) will be invited to participate in collaboration with other Aboriginal groups.	Reply Evidence 7.22 Tsawassen First Nation - p14 - line 17	1 - Prior to Construction	Complete		
2,545	Environment	Tsleil-Waututh Nation	Trans Mountain will be hosting regional workshops along the proposed Project corridor to discuss the Environmental Protection Plan (EPP) and Emergency Management (EM); Tsleil-Waututh Nation (TWN) will be invited to participate in collaboration with other Aboriginal groups. Project mitigation measures will be reviewed including those that will be utilized to minimize Project related effects, as identified in the TWN report. Trans Mountain is committed to continued engagement with TWN to discuss the Project and the potential Project related effects on TWN.	Reply Evidence 7.23 Tsleil-Waututh Nation p15 - line 4	1 - Prior to Construction	Complete		
2,546	Environment	Upper Nicola Band	Trans Mountain will be hosting regional workshops along the proposed Project corridor to discuss the Environmental Protection Plan (EPP) and Emergency Management (EM); Upper Nicola Indian Band (UNB) will be invited to participate in collaboration with other Aboriginal groups. In its evidence filling ID A4k414, UNB requested continued consultation with Trans Mountain regarding the Project on multiple matters, Trans Mountain acknowledges that Upper Nicola Indian Band has requested that engagement with Trans Mountain remain confidential.	Reply Evidence 7.24 Upper Nicola Band p15 line 14	1 - Prior to Construction	Complete		
2,604	Environment	NEB	Trans Mountain will conduct monitoring at all flowing open cut crossings to document downstream turbidity and any exceedances of the relevant guidelines will be reported to the appropriate regulatory authorities.	Application Volume 5A s. 7.2.3.6 p7-68	2 - During Construction	Scoping		
2,611	Environment	NEB	Trans Mountain will incorporate expansion of the Burnaby Terminal into its existing stormwater monitoring program, whereby Trans Mountain will continue to monitor flash drainage events in an effort to identify potential effects and implement necessary measures to reduce or avoid Project-related effects to the Eagle Creek watershed.	Application Volume 5A s. 7.5.3.4 p7-384	2 - During Construction	Scoping		
2,971	Environment	Metro Vancouver	Trans Mountain commits to meet with Metro Vancouver to discuss the methodology and results.	Metro_Vancouver_IR_No._16.04b-Response_to_Motion	1 - Prior to Construction	Complete		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
3.026	Environment	NEB	Trans Mountain will schedule construction, routine maintenance and operational activities outside the spring period for caribou (generally mid-March to mid-July), unless otherwise approved by Alberta Environment and Sustainable Resource Development (ALSRD).	NEB_IR_No_3.010a-Attachment_1	2 - During Construction	In Progress		
3.111	Environment	NEB	Trans Mountain has committed to developing additional steps for the preservation of the topsoil on Yarrow Ecovillage's organic farm in cooperation with the landowners and land users as well as the Organic Certification Board.	Revised Final Argument s. 7.2.1.2	1 - Prior to Construction	In Progress		
3.125	Environment	NEB	Trans Mountain has committed to searching for bat roost trees during the period when maternity roosts are active. In the event an active roost tree is found, a protective buffer will be implemented based on consultation with provincial regulators.	Revised Final Argument s. 7.2.1.11 p285	1 - Prior to Construction	In Progress		
3.126	Environment	NEB	Trans Mountain has committed to reviewing and identifying active colonies that may be affected by construction activities in areas with high suitability habitat for swifts and swallows to ensure appropriate mitigation is implemented.	Revised Final Argument s. 7.2.1.11 p286	1 - Prior to Construction	In Progress		
3.127	Environment	NEB	Trans Mountain will have procedures in place to ensure that irrigation water is not interrupted and has committed to working with Yarrow Ecovillage in advance of construction to develop a strategy to ensure that temporary irrigation lines are installed and permanent irrigation lines are established during and after construction.	Revised Final Argument s. 7.2.1.2 p236	1 - Prior to Construction	In Progress		
3.273	Environment	Sto:lo Collective	A copy of the draft Archaeological Impact Assessment (AIA) final report will be forwarded in confidence to the Sto:lo Collective for review, comment and proposed edits before submission of the report to British Columbia Ministry of Forests, Lands and Natural Resource Operations (BC MFLNRRO) Archaeology Branch. Once accepted by BC MFLNRRO Archaeology Branch, a copy of the final AIA report will be forwarded in confidence to the Sto:lo Collective.	Sto:lo Collective Attachment - Table 3a	1 - Prior to Construction	Complete		
3.367	Environment	City of Abbotsford	Restoration strategies, including those for tree replacement will be developed in consultation with applicable landowners, the City of Abbotsford (on municipal lands) or the regulatory authority responsible for the management of Crown lands.	City_of_Abbotsford_IR_No_2.2.07d, City_of_Abbotsford_IR_No_2.2.09d	1 - Prior to Construction	In Progress		
3.417	Environment	C.G.L.A.P. - Collaborative Group of Landowners Affected by Pipelines	Trans Mountain is committed to systematic and timely communication with farm operators. Based on this communication, detailed biosecurity measures will be developed collaboratively between the farm operator and Trans Mountain.	CGAP_IR_No_2.8b	1 - Prior to Construction	Superseded by NEB Condition	72	

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (k) Number	Additional Comments
3,739	Environment	BC Ministry of Transportation and Infrastructure	Trans Mountain commits to the following for the Coldwater 4 geotechnical site: - Using natural clearings to minimize disturbance and no clearing is proposed. - Transporting all drilling mud off site for disposal at an approved facility. In the event that the drilling mud is to be disposed of on-site, the requirements outlined in the British Columbia Oil and Gas Handbook, Drilling Waste Management Chapter, will be adhered to. - Using a tracked drill rig to access the drill site.	Non-Regulatory Commitment	1 - Prior to Construction	Complete		
3,743	Environment	Frotek Cattle Co. Ltd	Trans Mountain commits to washing UTV's each time field crews leave or enter the property. Special attention should be paid to underneath the UTV's.	Non-Regulatory Commitment	2 - During Construction	In Progress		
3,824	Environment	Matsqui First Nation	Trans Mountain commits to use a Matsqui member as an environmental monitor in Matsqui Traditional Territory.	Matsqui First Nation Letter dated October 2, 2015 to Margaret Mears item b.	2 - During Construction	Scoping		
3,825	Environment	Matsqui First Nation	Trans Mountain commits to use a Matsqui member as an environmental monitor in Matsqui Traditional Territory.	Matsqui First Nation Letter dated October 2, 2015 to Margaret Mears item b.	2 - During Construction	Scoping		
3,826	Environment	Environment Canada	Trans Mountain will ensure all construction right-of-way clearing activities and site reclamation activities are in accordance with the Plant Protection Act – Balsam Woolly Adelgid (B.C. Reg. 414/92).	GoC_EC_IR_No._2.122	2 - During Construction	In Progress		
3,827	Environment	Environment Canada	Trans Mountain will ensure all construction right-of-way clearing activities and site reclamation activities are in accordance with the Plant Protection Act – Balsam Woolly Adelgid (B.C. Reg. 414/92).	GoC_EC_IR_No._2.122	2 - During Construction	In Progress		
3,828	Environment	Sto:lo Collective	As part of the workshop series described in the response to Recommendation 2 Trans Mountain will include the subjects of aquatics and water crossings.	Sto:lo Collective Recommendation #9, #21	1 - Prior to Construction	Scoping		
3,829	Environment	Sto:lo Collective	As part of the workshop series described in the response to Recommendation 2 Trans Mountain will include the subjects of aquatics and water crossings.	Sto:lo Collective Recommendation #9, #21	1 - Prior to Construction	Scoping		
3,830	Environment	Sto:lo Collective	Trans Mountain will recognize places names (such as on Project maps, signs and fencing) during the construction of the Project.	Sto:lo Collective Recommendation #45	2 - During Construction	In Progress		
3,831	Environment	Sto:lo Collective	Trans Mountain will recognize places names (such as on Project maps, signs and fencing) during the construction of the Project.	Sto:lo Collective Recommendation #45	2 - During Construction	In Progress		

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
3,839	Environment	Matsqui First Nation	Trans Mountain will deliver a stand alone list of actions and commitments to the Matsqui Lands Manager no later than 90 days before construction. This document will list the actions to avoid, mitigate and compensate for Project effects that will be binding on Kinder Morgan Canada (KMC) as a necessary element of the Matsqui First Nation Environmental Assessment.	Matsqui First Nation Letter dated October 2, 2015 to Margaret Means item C3	1 - Prior to Construction	Complete		
3,840	Environment	Matsqui First Nation	Trans Mountain will deliver a stand alone list of actions and commitments to the Matsqui Lands Manager no later than 90 days before construction. This document will list the actions to avoid, mitigate and compensate for Project effects that will be binding on Kinder Morgan Canada (KMC) as a necessary element of the Matsqui First Nation Environmental Assessment.	Matsqui First Nation Letter dated October 2, 2015 to Margaret Means item C3	1 - Prior to Construction	Complete		
3,841	Environment	Stó:lō Collective	Trans Mountain will be hosting regional workshops along the proposed Project corridor to discuss the Environmental Protection Plan (EPP) and Emergency Management (EM). Stó:lō will be invited to participate in collaboration with other Aboriginal groups located in the region. Project mitigation measures will be reviewed including those that will be utilized to minimize Project related effects as identified in the Integrated Cultural Assessment (ICA) Report. Trans Mountain is committed to continued engagement with Stó:lō to discuss the Project and the potential Project related effects on Stó:lō.	Reply Evidence 7.15 Stó:lō Collective - p10 - line 38	1 - Prior to Construction	In Progress		
3,842	Environment	Stó:lō Collective	Trans Mountain will be hosting regional workshops along the proposed Project corridor to discuss the Environmental Protection Plan (EPP) and Emergency Management (EM). Stó:lō will be invited to participate in collaboration with other Aboriginal groups located in the region. Project mitigation measures will be reviewed including those that will be utilized to minimize Project related effects as identified in the Integrated Cultural Assessment (ICA) Report. Trans Mountain is committed to continued engagement with Stó:lō to discuss the Project and the potential Project related effects on Stó:lō.	Reply Evidence 7.15 Stó:lō Collective - p10 - line 38	1 - Prior to Construction	In Progress		
3,843	Environment	Squamish Nation	Trans Mountain will be hosting regional workshops along the proposed Project corridor to discuss the Environmental Protection Plan (EPP) and Emergency Management (EM). Squamish Nation will be invited to participate in collaboration with other Aboriginal groups. Trans Mountain is committed to continued engagement with Squamish Nation (SN) to discuss the Project and the potential Project related effects on SN.	Reply Evidence 7.17 Squamish Nation - p12 - line 23	1 - Prior to Construction	In Progress		

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
3,851	Environment	Sto:lo Collective	As part of the workshop series described in the response to Recommendation 2, Trans Mountain will offer a focused workshop to review the draft Environmental Protection Plan (EPP) and Environmental Alignment Sheets (EAS). Trans Mountain will submit up to date versions of the EPP and EAS to Sto:lo representatives.	Sto:lo Collective Recommendation #3	1 - Prior to Construction	In Progress		
3,852	Environment	Sto:lo Collective	As part of the workshop series described in the response to Recommendation 2, Trans Mountain will offer a focused workshop to review the draft Environmental Protection Plan (EPP) and Environmental Alignment Sheets (EAS). Trans Mountain will submit up to date versions of the EPP and EAS to Sto:lo representatives.	Sto:lo Collective Recommendation #3	1 - Prior to Construction	In Progress		
3,853	Environment	Sto:lo Collective	Where water quality monitoring fails to meet the parameters of established guidelines and is not in compliance with regulatory requirements, Trans Mountain will report the incident to Sto:lo representatives within the requested timeframe.	Sto:lo Collective Recommendation #11	2 - During Construction	In Progress		
3,854	Environment	Sto:lo Collective	Where water quality monitoring fails to meet the parameters of established guidelines and is not in compliance with regulatory requirements, Trans Mountain will report the incident to Sto:lo representatives within the requested timeframe.	Sto:lo Collective Recommendation #11	2 - During Construction	In Progress		
3,855	Environment	Sto:lo Collective	Trans Mountain remains committed to ongoing engagement with Sto:lo representatives to discuss the inclusion of existing Sto:lo knowledge into the updated EPPs for the project.	Sto:lo Collective Recommendation #12	1 - Prior to Construction	In Progress		
3,856	Environment	Sto:lo Collective	Trans Mountain remains committed to ongoing engagement with Sto:lo representatives to discuss the inclusion of existing Sto:lo knowledge into the updated EPPs for the project.	Sto:lo Collective Recommendation #12	1 - Prior to Construction	In Progress		
3,857	Environment	Sto:lo Collective	Trans Mountain's procurement team and Chief Environmental Inspector will discuss the requirements and existing capacity re: qualified monitoring personnel and services with the Sto:lo representatives.	Sto:lo Collective Recommendation #13, #14, #26, #40, #41, #52	1 - Prior to Construction	In Progress		
3,858	Environment	Sto:lo Collective	Trans Mountain's procurement team and Chief Environmental Inspector will discuss the requirements and existing capacity re: qualified monitoring personnel and services with the Sto:lo representatives.	Sto:lo Collective Recommendation #13, #14, #26, #40, #41, #52 A457H3	1 - Prior to Construction	In Progress		
3,859	Environment	Sto:lo Collective	If clearing in Old Growth Management Areas (OGMAs) within the 56th Ternew becomes an approved construction requirement, Trans Mountain will discuss Sto:lo's desire to salvage cedar with the OGMA regulator and the terms for commercial harvest will be negotiated.	Sto:lo Collective Recommendation #18	1 - Prior to Construction	In Progress		

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (K) Number	Additional Comments
3,860	Environment	Sto:lo Collective	Trans Mountain will provide advance notification of planned herbicide application to the Sto:lo representatives.	Sto:lo Collective Recommendation #37	6 - Project Lifecycle	In Progress		
3,861	Environment	Sto:lo Collective	Trans Mountain will provide advance notification of planned herbicide application to the Sto:lo representatives.	Sto:lo Collective Recommendation #37	6 - Project Lifecycle	In Progress		
92	Facilities Construction	Upper Nicola Band	If additional pit run material is required at Kingsville Pump Station, Trans Mountain will ask the contractor(s) undertaking the civil construction work to find one or more borrow sources within a reasonable distance from the site.	Upper_Nicola_Band_I_R_No._2(c).01.a	2 - During Construction	Scoping		
394	Facilities Construction	NEB	Trans Mountain will use well maintained equipment to reduce air pollution and unnecessary noise and restrict the duration that vehicles and equipment are allowed to sit and idle to less than one hour unless air temperatures are less than 0°C.	Technical Update No. 1 and Consultation Update No. 2 - Part 2 Table 1.6.3-1 page 100	2 - During Construction	Scoping		
415	Facilities Construction	City of Burnaby	A permanent station will be set up as part of the dock expansion and that will provide information to the terminal operator, ship, pilots and others on wind conditions at the Westridge dock.	City_Burnaby_IR_No._1.26.10c	3 - Prior to Operations	In Progress		
489	Facilities Construction	NEB	Trans Mountain will file the exact final locations (including the GPS coordinates) of the new Line 2 pump stations and Black Pines Pump Station as a condition of future Project approval, if such an approval is granted or condition issued.	NEB_IR_No._3.047	1 - Prior to Construction	In Progress		
643	Facilities Construction	City of Coquitlam	Trans Mountain will commit to restoring and repaving as necessary the two northern (westbound) lanes of United Blvd post construction, in the areas affected by Trans Mountain's construction works.	City_of_Coquitlam_IR_No._2.D.3	1 - Prior to Construction	Scoping		
2,237	Facilities Construction	NEB	Trans Mountain commits to conduct a further geotechnical investigation at the north end of the Edmonton Terminal West tank Area (WTA) for the proposed new storage tank foundations, during the detailed engineering and design phase. Trans Mountain will ensure a geotechnical screening evaluation will be completed to determine whether it is practical, useful and cost effective to attempt to drill somewhat deeper than might otherwise be required to determine if old underground mine workings exist in any zone that could be geotechnically material.	NEB_IR_No._4.60b	1 - Prior to Construction	Complete		
2,580	Facilities Construction	NEB	Trans Mountain will ensure each pump station site will have no less than one resident inspector, and it is anticipated that there will be a combined construction management and inspection team of five to ten staff for each group of three or four pump stations.	Application Volume 4B s. 4.4.1 p4B-43	2 - During Construction	Scoping		

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Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition [X] Number	Additional Comments
2,582	Facilities Construction	NEB	Trans Mountain will ensure the Sumas Terminal site will have no less than one resident inspector, and it is anticipated that there will be a combined construction management and inspection team of five to ten staff.	Application Volume 4B s. 4.1 p48-43	2 - During Construction	Scoping		
108	Facilities Engineering	Burnaby Board of Trade	Trans Mountain will ensure seismic design of storage tanks, including consideration of sloshing and other effects, is in accordance with the latest edition of the American Petroleum Institute (API) Standard 650, Welded Tanks for Oil Storage, Annex E, the recognized North American standard.	P-IR No. 1.02-03.d	1 - Prior to Construction	Scoping		
109	Facilities Engineering	Burnaby Board of Trade	Trans Mountain will ensure seismic design of storage tanks, including consideration of sloshing and other effects, is in accordance with the latest edition of the American Petroleum Institute (API) Standard 650, Welded Tanks for Oil Storage, Annex E, the recognized North American standard.	P-IR No. 1.02-03.d	1 - Prior to Construction	Scoping		
140	Facilities Engineering	City of Burnaby	As part of the proposed expansion of Westridge Marine Terminal, the existing diesel-powered standby emergency generator will be replaced with one of an appropriate (larger) size.	City_Burnaby_IR_No._1.25-03b	3 - Prior to Operations	In Progress		
142	Facilities Engineering	City of Burnaby	The design of the proposed standby emergency power systems and the fire water pumping systems at Burnaby Terminal will include ensuring that the systems will operate within the legislative requirements for noise. The equipment will be installed in buildings designed to attenuate noise, as necessary.	City_Burnaby_IR_No._1.25-03d	1 - Prior to Construction	In Progress		
145	Facilities Engineering	City of Burnaby	The weather threshold for remaining moored at the dock will be determined as part of the final dock design engineering.	City_Burnaby_IR_No._1.26-10d, TERMPOL 3.13 Section 3 [Filing ID A35400, PDF Page 7]	1 - Prior to Construction	Superseded by NEB Condition	84	
162	Facilities Engineering	Environment Canada	Trans Mountain will use the best available fugitive volatile organic compounds (VOC) emissions reduction technology that is suitable for the application at Westridge Marine Terminal, with the primary goals of reducing fugitive VOC emissions and odorous emissions from vessel loading to the greatest extent practical.	GoC_EC_IR_No._1.065_b	1 - Prior to Construction	Superseded by NEB Condition	53	
163	Facilities Engineering	Environment Canada	Trans Mountain will use the most applicable short term and long-term meteorological data, including wind extremes and the Environment Canada data, to inform the design of Westridge Marine Terminal.	GoC_EC_IR_No._1.011	1 - Prior to Construction	Superseded by NEB Condition	52	
167	Facilities Engineering	Natural Resources Canada	Trans Mountain will consider applicable topography and site effects (soil effects), including amplification, in the design of tanks, tank foundations, and containments systems.	GoC_NRCAn_IR_No._1.02-06	1 - Prior to Construction	Superseded by NEB Condition	23,24,25	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (k) Number	Additional Comments
170	Facilities Engineering	Shelligan MacDonald	The Burnaby Terminal fire-protection system will be expanded and enhanced with new resources as described in Section 3.4.3.8.2 of Volume 4A.	MacDonald_S_IR_No._1.4b, Volume 4A, Section 3.4.3.8.2 (Filing ID A3SOY8, PDF page 105)	1 - Prior to Construction	Superseded by NEB Condition	127	
191	Facilities Engineering	Upper Nicola Band	The mainline pumps and some piping systems will be housed within a pump building that includes secondary containment with hydrocarbon detection.	Upper_Nicola_Band_I_R_No._1.04a	1 - Prior to Construction	Complete		
194	Facilities Engineering	NEB	A comprehensive assessment of all the above and below ground piping at Niton Pump Station will be completed to support the engineering assessment referenced in the response to NEB IR 1.8c.	NEB_IR_No._1.88d	1 - Prior to Construction	Superseded by NEB Condition	31	
202	Facilities Engineering	NEB	Drawings showing the scope of the proposed storage tank removals at Burnaby Terminal (existing Tank 74) will be prepared during the detailed engineering and design phase and during detailed construction planning in 2015.	NEB_IR_No._2.116a	1 - Prior to Construction	Complete		
204	Facilities Engineering	NEB	For the proposed expansion at Edmonton Terminal, in the West Tank Area (WTA), Trans Mountain has committed to comply with the secondary containment capacity requirements of the Alberta Fire Code (AFC), which requires that the capacity of a shared containment area be 100% of the volume of the largest tank plus 10% of the volume of the other tanks within the area.	NEB_IR_No._2.128b1	1 - Prior to Construction	Superseded by NEB Condition	23	
205	Facilities Engineering	NEB	For the proposed expansion of Burnaby Terminal, Trans Mountain has committed to comply with the secondary containment capacity requirements of the British Columbia Fire Code (BCFC), which requires that the capacity of a shared containment area be 100% of the volume of the largest tank plus 10% of the volume of the other tanks within the area. For some tanks, secondary containment will be partially provided by remote impoundment, in accordance with the requirements of National Fire Protection Association (NFPA) Code 30.	NEB_IR_No._2.130b	1 - Prior to Construction	Superseded by NEB Condition	24	
210	Facilities Engineering	NEB	Trans Mountain has committed to adopt facility design and emission control measures that do not result in any additional exceedances where air quality standards are predicted to be exceeded by existing developments and activities in the case of air emissions.	NEB_IR_No._2.041b	1 - Prior to Construction	Superseded by NEB Condition	52, 53, 54, 55, 79	
211	Facilities Engineering	NEB	On the new line, all valves will be automated. The new line through Jasper exists line, valves will be automated on a priority basis including valves near river crossings and sensitive areas.	Part 2 – Public Consultation Update No. 1, Table 1.6-1	4 - Operations	Superseded by NEB Condition	17	

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213	Facilities Engineering	NEB	Plans for constructing the proposed new storage tanks at Burnaby Terminal, without disturbing the containment function of existing berms or construction planning in 2015.	NEB_R_No._2.119d	1 - Prior to Construction	In Progress		
218	Facilities Engineering	NEB	Trans Mountain will apply industry best practices in the selection of lighting types and fixtures at Westridge Marine Terminal (WMT) that minimize extraneous light pollution, including the use of LED (light emitting diode) technology.	NEB_R_No._2.012a, NEB_R_No._2.012b	1 - Prior to Construction	In Progress	82	
220	Facilities Engineering	NEB	Trans Mountain will complete an engineering assessment for the reactivation of two isolation valves at Jasper Pump Station by June 2016, in sufficient time to replace the valves in the unlikely event that they are deemed unfit for service on line 1.	NEB_R_No._1.88a	1 - Prior to Construction	In Progress	18	
221	Facilities Engineering	NEB	Trans Mountain will conduct a reliability, availability, and maintainability (RAM) analysis for Line 1 and Line 2 during the detailed engineering and design phase to confirm or adjust the availability factors and sparing philosophy. It is expected that the RAM analysis will be complete by the end of Q1 2015.	NEB_R_No._1.93f	1 - Prior to Construction	Complete		
222	Facilities Engineering	NEB	Trans Mountain will consider the need for installed or uninstalled ready for quick installation), spare vapour recovery arms or alternate back-up connection systems, such as portable hoses (similar to what is currently used at WMT), during the detailed engineering and design phase.	NEB_R_No._2.122g	1 - Prior to Construction	In Progress		
223	Facilities Engineering	NEB	Trans Mountain will contract with a firm specializing in control systems to integrate the new equipment into a control scheme for each facility. The control scheme will utilize existing approved control philosophies and practices, and will be developed under the supervision of Trans Mountain operating staff.	Application Volume 4B 45.	1 - Prior to Construction	In Progress	116	
225	Facilities Engineering	NEB	Trans Mountain will follow the recommendations of the latest edition of American Petroleum Institute (API) Recommended Practice 2003, Protection Against Ignitions Arising Out of Static, Lightning and Stray Currents. Trans Mountain will also follow the requirements of the latest edition of Canadian Standards Association Canadian Electrical Code, C221, Safety Standard for Electrical Installations.	NEB_R_No._2.075d	1 - Prior to Construction	In Progress		
232	Facilities Engineering	NEB	Trans Mountain will provide to the NEB the maximum inlet (suction) pressures for the line 2 pump stations following completion of the transient hydraulic analysis, expected by Q2 2015.	NEB_R_No._1.94c	1 - Prior to Construction	Complete		

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233	Facilities Engineering	NEB	Trans Mountain will submit the duration of dredging and the results of the sediment dispersion modelling to the NEB no later than 60 days prior to the start of dredging activities.	NEB_IR_No._1.50c	1 - Prior to Construction	Superseded by NEB Condition	35	
237	Facilities Engineering	NEB	Where it is possible and / or desirable to avoid slack flow during pipeline shut down scenarios, mainline valves will be selectively closed to maintain line pack.	NEB_IR_No._2.090a	4 - Operations	Superseded by NEB Condition	135	
238	Facilities Engineering	NEB	With respect to storm/water runoff in the proposed Tank 100 and Tank 103 shared secondary containment at Sumas Terminal, Trans Mountain will provide a motor operated valve (MOV) on the proposed new secondary containment drain system, in a safe location outside of the secondary containment berm.	NEB_IR_No._2.129g	2 - During Construction	In Progress		
239	Facilities Engineering	NEB	With respect to the 3 tanks to be built at Westridge Terminal, all proposed tanks will be located within secondary containment designed in accordance with Canadian Standards Association (CSA) Standard Z662 and the National Fire Protection Association (NFPA) Code 30. Trans Mountain will provide overfill protection in accordance with American Petroleum Institute (API) Standard 2350. All proposed tanks will be equipped with a radar gauging system for liquid level measurement and overfill protection.	NEB_IR_No._2.125b3 and 2.125b4	1 - Prior to Construction	No Longer Applicable		Tanks have been excluded from the design so commitment is no longer relevant.
240	Facilities Engineering	NEB	With respect to the existing jet fuel unloading system at proposed Berth 1 at Westridge Marine Terminal (WMT), Trans Mountain will design and construct the replicated facilities using the same principles, standards, procedures, and practices that will be applied to the proposed new crude oil loading systems at WMT, thereby incorporating some improvements over the existing jet fuel unloading arm system.	NEB_IR_No._2.131d	1 - Prior to Construction	Superseded by NEB Condition	4	
250	Facilities Engineering	British Columbia Hydro and Power Authority	Trans Mountain commits to working with BC Hydro to establish safe separation distances from the various power line circuits involved in the TMEP.	BC_Hydro_IR_No._1.1	1 - Prior to Construction	Superseded by NEB Condition	50	
253	Facilities Engineering	British Columbia Hydro and Power Authority	Trans Mountain will consult with BC Hydro's designated project manager during the Detailed Engineering and Design Phase of the Project to identify potential facility conflicts and develop reasonable mitigation plans. If mitigation requires BC Hydro to relocate facilities, Trans Mountain agrees to follow BC Hydro's Transmission Line Relocation Agreement (TLRA) process.	BC_Hydro_IR_No._1.2	1 - Prior to Construction	In Progress		
257	Facilities Engineering	Adams Lake Indian Band	A management of change process will be followed ensuring changes to mitigation measures are approved and communicated to appropriate project personnel and regulatory agencies as required.	AllB_IR_No._1.6.02b	1 - Prior to Construction	Superseded by Management Plan		

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317	Facilities Engineering	Environment Canada	Trans Mountain will determine the requirement for dredging, quantity of material, etc. after completion of a geotechnical investigation, which is planned for the summer / fall of 2014.	EC_P_I_R_No._1.27	1 - Prior to Construction	Superseded by NEB Condition	35	
432	Facilities Engineering	NEB	All pump stations and terminals in the expanded TMPL system will include emergency shutdown (ESD) systems that will operate automatically in some abnormal operating conditions and can also be activated remotely from the Pipeline Control Centre (PCC) or locally by field operations.	Part 2 – Consultation Update No. 1-2-44	1 - Prior to Construction	Superseded by NEB Condition	115	
468	Facilities Engineering	NEB	Trans Mountain commenced the process of gathering additional volatile organic compound (VOC) emissions information in 2014 and will conduct further measurements during tanker loadings at Westridge Marine Terminal (WMT) in 2015.	NEB_I_R_No._3.019b	1 - Prior to Construction	Superseded by NEB Condition	52	
490	Facilities Engineering	NEB	Conceptual design for the Line 2 pressure control and pressure relief systems proposed for the Hope site has been completed and a piping and instrumentation diagram (P&ID) will be prepared for Hazards and Operability (HazOp) review by Q3, 2015. The R&D will be updated based on the HazOp recommendations and it is anticipated that the design basis will be completed by the end of Q3, 2015. Detail design is planned for 2016.	NEB_I_R_No._3.051a.2	1 - Prior to Construction	Superseded by NEB Condition	17,104	
495	Facilities Engineering	NEB	Trans Mountain will provide updated pump station single line diagrams as a condition of future Project approval, if such an approval is granted or condition issued.	NEB_I_R_No._3.057b	1 - Prior to Construction	Superseded by NEB Condition	30	
496	Facilities Engineering	NEB	The communications block diagram for the existing Trans Mountain pipeline system will be updated during the detailed engineering and design phase to include the new Black Pines Pump Station site and to reflect the concept that back-up communications will be provided by satellite at Black Pines and at the existing pump station sites where new pump stations are being added as part of the Project.	NEB_I_R_No._3.058b	1 - Prior to Construction	Superseded by NEB Condition	116	
497	Facilities Engineering	NEB	Trans Mountain will provide the NEB with a copy of the design basis for the Westridge Marine Terminal fire protection system as a condition of future Project approval.	NEB_I_R_No._3.065	1 - Prior to Construction	Superseded by NEB Condition	118	
498	Facilities Engineering	NEB	Trans Mountain will file a summary of the Hazards and Operability (HazOp) reviews and contingency plans for Westridge Marine Terminal (WMT) as a condition of future Project approval, if such an approval is granted or condition issued.	NEB_I_R_No._3.071e	1 - Prior to Construction	Complete		

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499	Facilities Engineering	NEB	Trans Mountain will install odour control systems on all of the proposed new tanks at Burnaby Terminal. As such Trans Mountain will utilize internal floating roofs on all of the proposed new tanks at Burnaby Terminal, a configuration which is required to enable the application of odour control systems.	NEB_IR_No._3.082b	1 - Prior to Construction	Superseded by NEB Condition	54	
500	Facilities Engineering	NEB	Trans Mountain will provide the updated design of Westridge Marine Terminal (WMT) with respect to the wind data collected at WMT, as a condition of future Project approval, should such approval be granted or condition issued.	NEB_IR_No._3.83b	1 - Prior to Construction	Superseded by NEB Condition	52	
504	Facilities Engineering	NEB	The under-tank leak detection system proposed for each new storage tank at the Sumas Terminal will consist of perforated pipes which will drain to a sump adjacent to the tank. The leak detection system design will be in accordance with API 650, Annex I.	NEB_IR_No._3.093b, NEB_IR_No._2.118c	1 - Prior to Construction	Superseded by NEB Condition	115	
539	Facilities Engineering	Environment Canada	Once the Process Design Basis for the emissions control system at Westridge Marine Terminal is finalized, Trans Mountain is willing to provide the process guarantees directly to the NEB and Environment Canada (EC).	Goc_EC_IR_No._2.071	1 - Prior to Construction	Superseded by NEB Condition	53	
556	Facilities Engineering	Environment Canada	Trans Mountain will implement the following mitigation measures at the Westridge Marine Terminal to reduce potential effects from artificial lighting: <ul style="list-style-type: none"><li>• Prevent sky-lighting which may lead to bird disorientation/collisions, where feasible; by: using low level and low intensity lighting; using no lighting in areas where no work is planned; using downturned shaded fixtures in light standards; and using a higher lumen/watt (light out to power in) ratio, such as metal halide lighting.</li></ul>	Goc_EC_IR_No._2.050	1 - Prior to Construction	Superseded by NEB Condition	82	
581	Facilities Engineering	Upper Nicola Band	Trans Mountain is committed to undertake a slope stability study for Kingsgate Pump Station during detailed engineering and design.	Upper_Nicola_Band_I_R_No._2(c).01.e	1 - Prior to Construction	In Progress		
609	Facilities Engineering	NEB	Trans Mountain will voluntarily comply with the fire retardant design requirements of the National Fire Code of Canada and the British Columbia Fire Code for the existing secondary containment areas at Sumas Terminal.	NEB_IR_No._4_27a	1 - Prior to Construction	Superseded by NEB Condition	22, 127	
610	Facilities Engineering	NEB	Trans Mountain will install fire protection systems on or nearby the proposed new tanks at the Sumas Terminal.	NEB_IR_No._4_29b	3 - Prior to Operations	Superseded by NEB Condition	118	
611	Facilities Engineering	NEB	Trans Mountain will focus efforts during detailed engineering, design, construction, and commissioning to prevent the alignment of conditions that could lead to a secondary containment pool fire event and the potential consequential effects at the Sumas Terminal.	NEB_IR_No._4_29c	6 - Project Lifecycle	Superseded by NEB Condition	22	

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613	Facilities Engineering	City of Burnaby	Trans Mountain is committed to evaluating other options for shoreline infilling and to minimizing the volume of dredging required, to the extent feasible.	City_Burnaby_IR_No_2.063a	1 - Prior to Construction	Superseded by NEB Condition	35	
682	Facilities Engineering	City of Port Moody	A gas monitoring network will be installed for early detection of any leaks or equipment malfunction. The detection equipment will be integrated with the Westridge Marine Terminal control system to allow for continuous measurement of the performance of the Vapour Combustion Unit (VCU) and Vapour Recovery Units (VRUs) to ensure that they are operating efficiently and effectively.	City_of_Port_Moody_IR_No_2.3.31	1 - Prior to Construction	Superseded by NEB Condition	52	
703	Facilities Engineering	Dorothy Doherty	New instrumentation for pressure and flow measurement for each of the delivery pipelines will be included in the designs of Burnaby Terminal.	Doherty_D_IR_No_2.1.m	1 - Prior to Construction	In Progress		
705	Facilities Engineering	Dorothy Doherty	Trans Mountain has seismic monitoring instruments at Burnaby Terminal today and will add additional seismic monitors as part of the Project.	Doherty_D_IR_No_2.3.a	3 - Prior to Operations	In Progress		
753	Facilities Engineering	City of Vancouver	Trans Mountain will file the details of the Westridge Marine Terminal control measures related to Environmental protection with the National Energy Board (NEB), when they are available, as a condition of future Project approval, if such approval is granted or condition issued.	City_of_Vancouver_IR_No_2.12.8	1 - Prior to Construction	Superseded by NEB Condition	81	
819	Facilities Engineering	Fraser Valley Regional District	Trans Mountain has committed to use Vapour Recovery and Combustion technology at the Westridge Marine terminal that will substantially reduce volatile organic compounds (VOC) emissions during product loading.	FVRD_IR_No_2.07a	3 - Prior to Operations	Superseded by NEB Condition	52, 53	
851	Facilities Engineering	Strata NW 313	Trans Mountain will reduce air emissions from the Project by incorporating emission reduction technologies in the Project design.	Strata_NW313_IR_N_0.2.27a	1 - Prior to Construction	Superseded by NEB Condition	52, 53, 54, 55, 79	
852	Facilities Engineering	Strata NW 313	Trans Mountain is committed to meeting the applicable ambient air quality objectives at the Sumas terminal and this is the primary criterion for determining tank design and vapour control configurations.	Strata_NW313_IR_N_0.2.27a	1 - Prior to Construction	Superseded by NEB Condition	54	
886	Facilities Engineering	Vancouver Fraser Port Authority DBA Port Metro Vancouver	Trans Mountain will meet or exceed accepted world standards in emission control practices as it has committed to design practices that represent state of the art technology and have selected a world leader in vapour control technology.	PMV_IR_No_2.24b	1 - Prior to Construction	Superseded by NEB Condition	54, 55	

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906	Facilities Engineering	Metro Vancouver	A gas monitoring network, including hydrocarbon detectors on the Vapour Combustion Unit (VCU) and Vapour Recovery Units (VRUs) and reduced sulphur compound (RSC) detectors around the site, will be installed, for early detection of any leaks or equipment malfunction. The detection equipment will be integrated with the Westridge Marine Terminal control system to allow for continuous measurement of the performance of the VCU and VRUs to ensure that they are operating efficiently and effectively.	Metro_Vancouver_IR_No._2.2.1a	1 - Prior to Construction	Superseded by NEB Condition	52,53	
920	Facilities Engineering	Simon Fraser University	Trans Mountain will agree to work directly with the City of Burnaby and SFU in the determination of the appropriate sizing of the new make-up water connection, if the City of Burnaby chooses to consider it.	SFU_IR_No._2.1.1.1	1 - Prior to Construction	Scoping		
1,523	Facilities Engineering	Living Oceans Society	Trans Mountain will implement additional controls to prevent the discharge of hydrocarbons into storm water including, as applicable to the Sumas Terminal : • Hydrocarbon detectors within secondary containment areas that, if triggered, will cause the automatic closure of the drain valve(s).	Living_Oceans_IR_No._1.28a	1 - Prior to Construction	In Progress		
2,177	Facilities Engineering	NFB	The sudden shut-down of all of the pump units at a pump station due to power failure has the potential to cause a pressure surge in the pipeline. Trans Mountain will complete a surge study during the detailed engineering and design phase and any recommendations, to mitigate potential pressure surges and any potential associated pipeline integrity related issues, as applicable, will be incorporated into the design and into the operating limits and protective device settings.	NEB_IR_No._2.080b	1 - Prior to Construction	Complete		
2,187	Facilities Engineering	NEB	Trans Mountain commits that the seismic design of the proposed new tank at Sumas Terminal, including consideration of sloshing and other effects, will be in accordance with the latest edition of the American Petroleum Institute (API) Standard 650, Welded Tanks for Oil Storage, Annex E, the recognized North American standard. All designs, including seismic considerations, will be undertaken by experienced and competent professional engineers, registered in British Columbia.	NEB_IR_No._2.129e	1 - Prior to Construction	In Progress		

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2,294	Facilities Engineering	District of North Vancouver	Trans Mountain must file with the NEB for approval, at least 90 days prior to applying for leave to open, a report prepared by an independent body confirming the adequacy of the proposed fire protection and firefighting systems implemented or planned to be implemented at the Westridge Marine Terminal.	Reply Argument - Appendix A Comments on NEB Draft Conditions - Condition 109a	3 - Prior to Operations	In Progress		
2,420	Facilities Engineering	District of North Vancouver	Trans Mountain will provide a copy of the report to interested local governments.	Reply Evidence 20.4 Considerations for Potential light and Noise Issues - p3 - line 30	1 - Prior to Construction	Complete		
2,421	Facilities Engineering	NEB	Trans Mountain will conduct an area lighting study when the detailed design of Westridge Marine Terminal has progressed to the point where lighting can be selected. While the purpose of area lighting is operational safety, impact to the surrounding communities will be given due consideration.	Reply Evidence 20.6 Proposed New Storage Tanks - p10 - line 20	1 - Prior to Construction	Complete		
2,424	Facilities Engineering	NEB	Trans Mountain will ensure the design of the proposed new storage tanks will be in accordance with the latest edition of the API Standard 650, Welded Tanks for Oil Storage, as per the legislative requirements.	Reply Evidence 20.6 Proposed New Storage Tanks - p11 - line 40	1 - Prior to Construction	In Progress		
2,435	Facilities Engineering	City of Burnaby	Trans Mountain will ensure all of the proposed new storage tanks at Burnaby Terminal will have water-draw piping, which may be used to remove water if it is deemed necessary as part of the tank water management program.	Reply Evidence 24.13 Boil Over - p35 - line 12	3 - Prior to Operations	Complete		
2,436	Facilities Engineering	City of Burnaby	Trans Mountain will install a custody transfer quality ultrasonic flow meter on each end of the two proposed new Burnaby to Westridge delivery pipelines, as well as the existing Burnaby to Westridge delivery pipeline. Trans Mountain will install the same type of meter on the proposed new mainline pipeline entering Burnaby Terminal.	City Burnaby_IR_No._ 1.08.05n	1 - Prior to Construction	Complete		
2,566	Facilities Engineering	NEB	Trans Mountain will ensure new tanks at Burnaby Terminal will be externally coated with a zinc primer/epoxy/top-coat system. The exterior colour will be determined with City of Burnaby and public input.	Application Volume 4A s. 3.4.3.4 p4A-75	1 - Prior to Construction	Scoping		

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2,673	Facilities Engineering	NEB	Trans Mountain will consider the following design elements during detailed design to verify that acoustic performance of the pump stations meet or exceed the sound emission values used in the prediction study:	Application Volume 5C 1. Prior to Construction TR-5C3 s. 7.2.1 p159,	In Progress			
			• Equipment sound emission (sound power levels), • Buildings and enclosures, • Vent louvres, and, • Equipment placement behind larger structures (barrier effects).	Application Volume 5C TR-5C3-Terrestrial Noises. 7.3.1 p161, Application Volume 5C TR-5C3-Terrestrial Noises. 7.4.1 p162				
2,856	Facilities Engineering	City of Abbotsford	Trans Mountain commits to consult with the City of Abbotsford concerning the earthen dike around the Sumas Pump Station and to implement any necessary mitigation measures.	City Abbotsford IR_No_0...1.7aii	1 - Prior to Construction	Scoping		
2,978	Facilities Engineering	New Democratic Party of Canada	Trans Mountain is committed to installing robust fire protection systems at all of the proposed new storage tank areas at Burnaby Terminal, which will include fixed, automated, film-seal area and full-surface fire suppression on the storage tanks, the ability to apply cooling water streams, and the ability to apply foam to spilled oil to suppress combustible vapours.	NDP_IR_No_2.2.1b	2 - During Construction	In Progress		
3,051	Facilities Engineering	Burnaby Board of Trade	Trans Mountain will ensure seismic design of storage tanks, including consideration of sloshing and other effects, is in accordance with the latest edition of the American Petroleum Institute (API) Standard 550, Welded Tanks for Oil Storage, Annex E, the recognized North American standard.	P-IR No. 1.02.03.d	1 - Prior to Construction	Scoping		
3,467	Facilities Engineering	Living Oceans Society	Trans Mountain will implement additional controls to prevent the discharge of hydrocarbons into storm water including, as applicable to the Edmonton Terminal:	Living_Oceans_IR_No._1.28a	1 - Prior to Construction	In Progress		
3,470	Facilities Engineering	NEB	Tanks at the Burnaby Terminal will be placed within secondary containment areas and will be fitted with fire-protection systems.	Application Volume 2, 2-22.	1 - Prior to Construction	Complete		
3,483	Facilities Engineering	NEB	The under-tank leak detection system proposed for each new storage tank at the Burnaby Terminal will consist of perforated pipes which will drain to a sump adjacent to the tank. The leak detection system design will be in accordance with API 650, Annex I.	NEB_IR_No._3.093b, NEB_IR_No._2.118c	1 - Prior to Construction	Complete		
3,485	Facilities Engineering	Dorothy Doherty	New instrumentation for pressure and flow measurement for each of the delivery pipelines will be included in the designs of Westridge Marine Terminal.	Doherty_D_IR_No._2_1.m	1 - Prior to Construction	Complete		

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3,487	Facilities Engineering	NEB	Tanks, pumps, motors, piping, and other components at the Burnaby Terminal will be protected by sophisticated control and ESD systems.	Application Volume 2, 2-22.	1 - Prior to Construction	Complete		
3,489	Facilities Engineering	NEB	Trans Mountain will provide overfill protection in accordance with API 2350. All proposed tanks at the Burnaby Terminal will be equipped with a radar gauging system for liquid level measurement and overfill protection. The overfill protection arrangement will be finalized during the detailed engineering and design phase.	NEB_IR_No._3_093b, NEB_IR_No._2_118c	1 - Prior to Construction	Complete		
3,491	Facilities Engineering	NEB	Trans Mountain will install fire protection systems on or nearby the proposed new tanks at the Burnaby Terminal.	NEB_IR_No._4_29b	3 - Prior to Construction	In Progress		
3,492	Facilities Engineering	Living Oceans Society	Trans Mountain will implement additional controls to prevent the discharge of hydrocarbons into storm water including, as applicable to the Westridge Marine Terminal: <ul style="list-style-type: none"><li>• Hydrocarbon detectors within secondary containments areas that, if triggered, will cause the automatic closure of the drain valve(s);</li><li>• Storm water collection tank(s) (WMT), with hydrocarbon detectors that, if triggered, will cause the automatic closure of the drain valve(s). Multiple tanks with weirs or high / low connections to provide bulk separation of crude oil and water, in an upset condition, are also being considered. In this context, the oil / water separators are the last elements of a multi-faceted system for protecting the environment during storm water discharge. The final configurations and features of the storm water management systems will be determined in the detailed engineering and design phase.</li></ul>	Living_Oceans_IR_No._1.28a	1 - Prior to Construction	Complete		
3,493	Facilities Engineering	Living Oceans Society	Trans Mountain will implement additional controls to prevent the discharge of hydrocarbons into storm water including, as applicable to the Burnaby Terminal: <ul style="list-style-type: none"><li>• Hydrocarbon detectors within secondary containments areas that, if triggered, will cause the automatic closure of the drain valve(s);</li><li>• An intermediate retention area, with hydrocarbon detectors that, if triggered, will cause the automatic closure of the drain valve(s); and A tertiary containment area.</li></ul>	Living_Oceans_IR_No._1.28a	1 - Prior to Construction	Complete		
3,565	Facilities Engineering	British Columbia Hydro and Power Authority	Trans Mountain will consult with BC Hydro's designated project manager during the Detailed Engineering and Design Phase of the Project to identify potential facility conflicts and develop reasonable mitigation plans. If mitigation requires BC Hydro to relocate facilities, Trans Mountain agrees to follow BC Hydro's Transmission Line Relocation Agreement (TLRA) process.	BC_Hydro_IR_No._1.2.1.1	Prior to Construction	In Progress		

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21	Health and Safety	City of Abbotsford	Trans Mountain commits to no complete closure of the two Ward Roads Shale and Jamieon Quarry.	City_of_Abbotsford_IR_No._1.02a	2 - During Construction	In Progress		
22	Health and Safety	City of Abbotsford	Trans Mountain is committed to working with the City of Abbotsford with respect to the Project and current operations to ensure the safety of the public that live, work and play near the pipeline and facilities.	City_of_Abbotsford_IR_No._1.16c, City_of_Abbotsford_IR_No._1.16e	1 - Prior to Construction	Superseded by NEB Condition	14, 49	
28	Health and Safety	City of Abbotsford	Trans Mountain will engage Mt. Lehman Fire Hall and Abbotsford municipal officials to ensure access and egress are available for emergency vehicles during construction. These plans will be communicated to Abbotsford once definitive plans are available.	City_of_Abbotsford_IR_No._1.21a	1 - Prior to Construction	In Progress		
30	Health and Safety	City of Burnaby	As part of detailed engineering and construction planning local Traffic Control Plans (TCPs) will be completed in consultation with provincial and municipal authorities. TCPs will take into account traffic volumes to minimize, to the greatest extent possible, the time and quantity of traffic disruption to roadway users.	City_Burnaby_IR_No._1.35.05k	1 - Prior to Construction	Superseded by NEB Condition	73	
31	Health and Safety	City of Burnaby	Issues and concerns from Municipal, School Administrators, and Community facilities will be documented and incorporated into Trans Mountain Expansion Project Health and Safety Management Plan and Prime Contractor's Project-Specific Safety Plans (FSSPs).	City_Burnaby_IR_No._1.06.08b, NEB_IR_No._1.15c (A3W918, page 117)	1 - Prior to Construction	Superseded by NEB Condition	64	
37	Health and Safety	Natural Resources Canada	Through its contract documents, Trans Mountain will ensure ongoing consultation between the Prime Contractor and fire management authorities regarding construction schedules, including locations and for discussions and implementation of planning as it pertains to wildfire danger conditions during the fire season.	GoC_NRCan_IR_No._1_07.1a	1 - Prior to Construction	Superseded by NEB Condition	89	
41	Health and Safety	Regional District of Fraser-Fort George	Trans Mountain commits to implement localized Traffic Control plans (TCPs) to minimize disruption, to the greatest possible extent, to Village and Regional District-owned property, and in consultation with municipal representatives of the Regional District of Fraser-Fort George and Valemount.	RD_of_Fraser-Fort_George_IR_No._1.12d	1 - Prior to Construction	Superseded by NEB Condition	73	
47	Health and Safety	Township of Langley	Trans Mountain will consult with the Township of Langley in the development of the traffic and access management plans, and traffic control plans, to mitigate potential negative effects.	Langley_IR_No._1.14e	1 - Prior to Construction	Superseded by NEB Condition	73	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
50	Health and Safety	NEB	To comply with the systematic Safety Management Program approach as required by Section 47 of the NEB Onshore Pipeline Regulations (OPR), an Emergency Response Plan (ERP) will be developed and implemented for TMEP construction. The TMEP ERP for construction will be separate from, and complementary to, the Trans Mountain operations ERP, and will lay out the guidelines for the development of the prime contractors' detailed site-specific ERPs. The TMEP ERP for construction will address legislative requirements and be based on recognized industry standards of practice. The site-specific ERPs will address potential construction emergency situations requiring response by TMEP construction resources (as supplied by the prime contractors), Trans Mountain operations resources, or external resources, in keeping with the philosophy of using the most immediately available resources.	Part 2 - Consultation Update No. 1, 2-45	1 - Prior to Construction	Superseded by NEB Condition	89	
51	Health and Safety	NEB	Trans Mountain will develop detailed traffic estimates as construction and Project planning related to the movement of people, materials and equipment continues. Trans Mountain will also develop further logistics information on transportation modes and routes to be used during the construction phase, as well as timing transportation movements to each construction spread and/or facility location.	Application Volume 5B, 7-129.	1 - Prior to Construction	Superseded by NEB Condition	73	
53	Health and Safety	NEB	Trans Mountain will employ a number of measures to reduce Project-related vehicles and limit the effects associated with construction-related traffic, including providing daily shuttle bus services from staging areas to work sites and for local workers from pre-determined regional staging areas.	Application Volume 5B, 7-129.	1 - Prior to Construction	Superseded by NEB Condition	73	
54	Health and Safety	NEB	Trans Mountain will have a Traffic and Access Control Management Plan and will direct contractors to have Traffic Control Plans, and the Project will employ numerous measures to reduce its transportation footprint.	Application Volume 5B, 7-135.	1 - Prior to Construction	Superseded by NEB Condition	73	
56	Health and Safety	NEB	Trans Mountain will implement controls, in accordance with the applicable legislative requirements, to prevent damage to over-head and underground power systems during construction.	NEB_IR_No._2_080a	1 - Prior to Construction	Superseded by NEB Condition	63	
57	Health and Safety	NEB	Trans Mountain will make the Code of Conduct available to all workers.	NEB_IR_No._1_16c	2 - During Construction	Superseded by NEB Condition	64	
66	Health and Safety	City of Burnaby; NEB	Trans Mountain will submit to the NEB a Construction Safety Manual 90 days in advance of construction commencing.	NEB_IR_No._1_15a_City_Burnaby_IR_No._1_0638b	1 - Prior to Construction	Superseded by NEB Condition	64	

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
77	Health and Safety	NEB	All construction sites with 20 or more workers will be required to establish a Work Place (Joint Worksite) Health and Safety (WHS&S) committee. The purpose of the committee is to review significant incidents and provide feedback on potential corrective actions as well as ensure that issues pertaining to workplace health and safety are addressed with worker input.	Application Volume 4B, 4B-50.	2 - During Construction	Superseded by NEB Condition	73	
78	Health and Safety	NFB	During construction, in areas where there may be a concern regarding the safety of the public, restricted areas are established. Trans Mountain will have a construction site safety and security plan in place and it will be communicated to the town representatives and adjacent residents.	Application Volume 5B, 3-70.	2 - During Construction	Superseded by NEB Condition	63, 64	
89	Health and Safety	City of Surrey; City of Vancouver	Trans Mountain will prepare a construction Emergency Response Plan (ERP).	CITY_OF_SURREY_IR_No_14h,_City_of_Vancouver_IR_No_108.02	1 - Prior to Construction	Superseded by NEB Condition	89, 125, 126	
91	Health and Safety	Sto:lo Collective	Trans Mountain is committed to the Traffic Mitigation Measures as part of the Socio-Economic Mitigation and Enhancement measures outlined in the TMEP Facility Application (Volume 6B, Section 8.4.3, Appendix C). Trans Mountain will continue engagement with Sto:lo on Recommendation 66 of their August 11, 2014 letter to Trans Mountain, but this recommendation requires Sto:lo representatives to identify necessary/ supporting information 6 months prior to construction.	August 11, 2014 Letter to Trans Mountain	1 - Prior to Construction	In Progress		
127	Health and Safety	NEB	Trans Mountain commits to consult with municipal and regional authorities and, as relevant, administrators of school and community facilities, on Public Protection measures. Agreed to measures will be incorporated into the Trans Mountain Health and Safety Management Plan which will form the minimum standards of Prime Contractor's Project Specific Safety Plans. Relevant issues and concerns from Municipal, School Administrators, and Community Facilities will be documented.	NEB_IR_No._1.15c	6 - Project Lifecycle	Superseded by NEB Condition	64	
283	Health and Safety	BC Parks; NEB	Prior to construction a danger tree risk assessment will be carried out in accordance with Occupational Health and Safety Regulation to ensure worker safety under WorkSafeBC.	BC Parks boundary adjustment application (August 2014)	1 - Prior to Construction	Superseded by NEB Condition	64	
502	Health and Safety	NEB	Site specific safe work procedures and mitigation measures for the Edmonton Terminal will be developed during detailed construction planning.	NEB_IR_No._3.93b	1 - Prior to Construction	Superseded by NEB Condition	64b	

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
638	Health and Safety	City of Burnaby	The proposed primary access routes at Burnaby Terminal will be designed and constructed so that emergency response access is available from a minimum of two independent directions.	City_Burnaby_IR_No._2.030e.iii)	2 - During Construction	In Progress		
639	Health and Safety	City of Coquitlam	Trans Mountain will develop localized, detailed Traffic Control Plans (TCP's) in cooperation with selected Contractors and with continued consultation with municipalities where work on public roadways is required, including United Boulevard.	City_of_Coquitlam_IR_No._2.A.I.c	1 - Prior to Construction	Superseded by NEB Condition	73	
648	Health and Safety	The City of Edmonton	Trans Mountain will develop a Traffic and Access Control Management Plan in consultation with the City of Edmonton prior to construction.	City_of_Edmonton_IR_No._2.3a	1 - Prior to Construction	Superseded by NEB Condition	73	
649	Health and Safety	The City of Edmonton	After the development of the site-specific construction Emergency Response Plan (ERP), Trans Mountain will provide a hard copy or electronic copy to the City of Edmonton as requested.	City_of_Edmonton_IR_No._2.4.3b	1 - Prior to Construction	Superseded by NEB Condition	89	
652	Health and Safety	City of Kamloops	Trans Mountain is committed to consultation with the City of Kamloops on traffic management plans.	City_of_Kamloops_IR_No._2.01g	1 - Prior to Construction	Superseded by NEB Condition	73	
663	Health and Safety	City of New Westminster	Trans Mountain is committed to consultation with the City of New Westminster on traffic management plans.	City_New_Westminster_IR_No._2.C.2.iii	1 - Prior to Construction	In Progress		
665	Health and Safety	City of New Westminster	Trans Mountain will undertake a communications and notification program to ensure local businesses, services and members of the public are made aware of potential construction impacts including lane restrictions, road closures and alternate access plans.	City_New_Westminster_IR_No._2.C.2	1 - Prior to Construction	Superseded by NEB Condition	73	
668	Health and Safety	City of New Westminster	Trans Mountain is committed to working with CN with respect to the Project and current operations to ensure the safety of the public that live and work near facilities.	City_New_Westminster_IR_No._2.E.1.ii	1 - Prior to Construction	In Progress		
722	Health and Safety	Township of Langley	Trans Mountain is committed, as part of the discussion with the Township of Langley, to providing forward notification to affected residents and/or businesses.	Langley_IR_No._2.17.a	1 - Prior to Construction	Superseded by NEB Condition	64,73	
859	Health and Safety	Samson Cree Nation	Should the Project be granted approval, Trans Mountain will implement measures to manage access during construction with the objectives of safety for Project participants and the public and to minimize Project Environmental disturbance. Trans Mountain will work with traditional land and resource users to select designated access locations for crossings over the construction right-of-way to allow safe access to traditional land.	Samson_Cree_Nation_IR_No._2.1.9	2 - During Construction	Superseded by NEB Condition	73	
1,000	Health and Safety	Regional District of Fraser-Fort George	During construction of the pipeline, Trans Mountain commits to ensure access to the Valmont transfer station for the haul truck (tractor) and 50-foot trailer during normal operating hours.	RD_of_Fraser-Fort_George_IR_No._1.12f	2 - During Construction	In Progress		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
1.002	Health and Safety	Regional District of Fraser-Fort George	As an essential service road, Trans Mountain can commit to ensuring no complete closure of the road to the transfer station during normal station hours such that access is available to the maximum possible extent. If open-cut crossing methods are employed on this road, Trans Mountain will further commit to consulting with transfer station operations representatives to determine an optimum construction schedule, including conducting Project activities outside normal transfer station hours. Access will be maintained for members of the public and local government staff.	RD_of_Fraser-Fort_George_IR_No_1 12g, RD_of_Fraser-Fort_George_IR_No_1 12e	2. During Construction	In Progress		
1.654	Health and Safety	Sto:lo Collective	Contractors will be required to adhere to Safety Management Programs and workers will be required to adhere to the employee code of conduct which will address substance and alcohol abuse.	Sto:lo Collective Recommendation #76	1. Prior to Construction	In Progress		
1.659	Health and Safety	Sto:lo Collective	Trans Mountain can commit to engagement with the Sto:lo Collective prior to commencing construction to discuss any potential issues in regard to the Construction Safety Manuals.	Sto:lo Collective Recommendation #87	1. Prior to Construction	In Progress		
2.258	Health and Safety	City of Abbotsford	Trans Mountain can commit to developing localized Traffic Control Plans (TCPs) to avoid diverting or delaying quarry truck traffic to residential streets and ensuring no complete closure of these roads during normal quarry operation hours such that access is available to the maximum extent possible.	City of Abbotsford IR No. 1.02a	2. During Construction	Scoping		
2.413	Health and Safety	City of Coquitlam	If, through detailed planning and discussion and consultation with the City of Coquitlam in the Technical Groups (TGroups), it is determined that emergency response times cannot be reasonably maintained, or that potential disruptions to access within the TMEP construction zones will occur, Trans Mountain would support the establishment of a temporary fire and emergency response station during the construction phase of TMEP.	Reply Evidence 19.1 Summary of New Commitments - p2 - line 21	2. During Construction	In Progress		
2.577	Health and Safety	NEB	Trans Mountain will report any unintentional fires caused by activities related to access road construction, logging, or debris disposal. It will be reported to the appropriate regulators and controlled. Fire control efforts will be described in the TMEP Fire Response Contingency Plan (FRCP). The FRCP will be completed prior to the commencement of clearing operations.	Application Volume 4B s. 3.4.2.1 p4B-15, Application Volume 4B s. 5.2.6 and 5.2.7	1. Prior to Construction	Scoping		
2.584	Health and Safety	NEB	The site-specific Traffic Control Plans (TCPs) will consider the use of ferrying at Westridge Marine Terminal as a traffic mitigation measure.	Application Volume 4B s. 4.4.2 p4B-43	1. Prior to Construction	Complete		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
2,872	Health and Safety	City of Burnaby	Trans Mountain will ensure the Lougheed highway remains open throughout the entire construction phase of the project.	City of Burnaby _IR_N o_143.2a- Response_to_Motion	2 - During Construction	In Progress		
3,586	Health and Safety	Stó:lō Collective	Trans Mountain is committed to the Traffic Mitigation Measures as part of the Socio-Economic Mitigation and Enhancement measures outlined in the TMEP Facility Application (Volume 6B, Section 8.4.3, Appendix C). Trans Mountain will continue engagement with Stó:lō on Recommendation 66 of their August 11, 2014 letter to Trans Mountain, but this recommendation requires Stó:lō representatives to identify necessary, supporting information 6 months prior to construction.	August 11, 2014 Letter from Stó:lō Collective to Trans Mountain	1 - Prior to Construction	In Progress		
3,591	Health and Safety	Stó:lō Collective	Trans Mountain will engage with Stó:lō representatives prior to commencing construction to discuss any potential issues in regard to the Traffic and Access Control Management Plan (TACMP); a) Routes will be included for construction access. b) Bussing or other worker transport management for construction workers - To be determined upon completion of the detailed engineering and construction, to be part of the proposed TACMP. c) Traffic supervision plans during construction to identify any access routes that have higher than predicted traffic and/or delays - Refer to b. d) Acceptable driving behaviour in S'ólh Temexw - Minimum standards will be part of the TACMP for personnel driving Project related vehicles which will be a part of the TACMP or the Health and Safety Management Plan for the Project. The Health and Safety Management Plan will be filed with the NEB as per Draft Condition 38, 90 Days prior to the start of construction. e) Schedules for the trucking of heavy loads to avoid peak traffic times and heavily-used intersections. Refer to b. f) The TACMP (or sub-plans as developed by the contractor selected for construction) will prohibit no-construction parking/staging areas along key access routes to Big houses, boat launches, trailheads near bathing sites.	Stó:lō Collective Recommendation #60, #66, #82	1 - Prior to Construction	In Progress		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition #/X Number	Additional Comments
3,592	Health and Safety	Sto:lo Collective	Trans Mountain will engage with Sto:lo representatives prior to commencing construction to discuss any potential issues in regard to the Traffic and Access Control Management Plan (TACMP): a) Routes will be included for construction access. b) Bussing or other worker transport management for construction workers - To be determined upon completion of the detailed engineering and construction, to be part of the proposed TACMP. c) Traffic supervision plans during construction to identify any access routes that have higher than predicted traffic and/or delays - Refer to b. d) Acceptable driving behaviour in S'ólh Témexw - Minimum standards will be part of the TACMP for personnel driving Project related vehicles which will be a part of the TACMP or the Health and Safety Management Plan for the Project. The Health and Safety Management Plan will be filed with the NEB as per Draft Condition 38, 90 Days prior to the start of construction. e) Schedules for the trucking of heavy loads to avoid peak traffic times and heavily-used intersections. - Refer to b. f) The TACMP (or sub-plans as developed by the Contractor selected for construction) will prohibit no-construction parking/staging areas along key access routes to Big houses, boat launches, trailheads near bathing sites.	Sto:lo Collective Recommendation #60, #66, #82	1- Prior to Construction	In Progress		
3,595	Health and Safety	Sto:lo Collective	Trans Mountain can commit to engagement with the Sto:lo Collective prior to commencing construction to discuss any potential issues in regard to the Construction Safety Manuals.	Sto:lo Collective Recommendation #87	1- Prior to Construction	In Progress		
3,629	Health and Safety	Village of Valemount	Trans Mountain will contact solid waste management consultant re Valemount landfill capacity.	Non-Regulatory Commitment	1- Prior to Construction	In Progress		
3,633	Health and Safety	City of Coquitlam	Trans Mountain will complete updated traffic counts in United Boulevard area.	Non-Regulatory Commitment	1- Prior to Construction	In Progress		
3,634	Health and Safety	City of Kamloops	Trans Mountain will maintain access to Aviation Way during construction (daily access required).	Non-Regulatory Commitment	2- During Construction	In Progress		
3,635	Health and Safety	Regional District of Fraser-Fort George	Trans Mountain will maintain consistent access to the Valemount landfill during construction.	Non-Regulatory Commitment	2- During Construction	In Progress		
82	Lands and ROW	Burnaby Teachers' Association	Trans Mountain Pipeline ULC can guarantee that no school will be expropriated in order to construct the Trans Mountain Expansion Project.	BTAG_R_No._1.1	1- Prior to Construction	Complete		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
164	Lands and ROW	Natural Resources Canada	A pre-construction timber cruise will be completed to determine the economically operable and merchantable timber volume for the construction right-of-way, and during the timber cruise, areas along the construction right-of-way with forest health concerns or activity will be identified and mapped.	GoC_NRCAN_IR_No._1 .09.1	1 - Prior to Construction	Scoping		
209	Lands and ROW	NEB	In communities where routing may deviate from the existing Trans Mountain Pipeline (TML) right-of-way, Trans Mountain will discuss and apply routing considerations and decision-making criteria in discussions with local stakeholders. Trans Mountain will inform landowners and lessees of the route location and construction schedule, to allow sufficient time to plan and implement alternative land use decisions.	Application Volume 5B, 3-6.	1 - Prior to Construction	In Progress		
372	Lands and ROW	City of Abbotsford	Should Ledgewiew Golf Course experience lost revenue as a result of the construction of the Trans Mountain Expansion Project, Trans Mountain would intend to employ 'actual loss' compensation for any reductions in golf course revenue caused by the construction and operation of the pipeline.	City_of_Abbotsford_IR_No._1.25b	3 - Prior to Operations	In Progress		
374	Lands and ROW	C.G.I.A.P. - Collaborative Group of Landowners Affected by Pipelines	Trans Mountain will bear the costs associated with the removal of soil, rocks, and debris, including the costs for permitting of the removal that are directly attributable to the Project.	CGIAP_IR_No._2.7h	2 - During Construction	Scoping		
376	Lands and ROW	C.G.I.A.P. - Collaborative Group of Landowners Affected by Pipelines	Where a landowner raises a concern, the Agricultural Monitor will take core soil samples across the construction right-of-way and off right-of-way to assess conditions, define anomalies, and make recommendations to resolve identified concerns.	CGIAP_IR_No._2.5f	2 - During Construction	Scoping		
378	Lands and ROW	Brian Kingman	The Kingman's are to be offered the Right of First Refusal on the logs cut on their property or equivalent compensation. The tree stumps from cut trees will be ground up by a grinder or hauled away from the property. The details of which trees are to be removed will be determined in a site visit between Landowner and the Trans Mountain Land Agent and documented on construction Line List provided to contractor.	Kingman_B_IR_No._1 .3b	2 - During Construction	Scoping		
380	Lands and ROW	NEB	If the Project is approved, formal notification to all directly affected tenure and disposition holders will take place in advance of construction activity. Communication with landowners and occupants is ongoing and questions or concerns will continue to be addressed throughout the life of the Project.	Application Volume 3C, section 1.3.1, page 3C-4	1 - Prior to Construction	Scoping		

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition [x] Number	Additional Comments
381	Lands and ROW	NEB	Trans Mountain confirms that all necessary third party crossing agreements will be obtained prior to construction.	NEB_IR_No._2.016	1 - Prior to Construction	In Progress	103	
382	Lands and ROW	NEB	Trans Mountain will acquire the necessary easement interests, permits and rights from private land owners and Crown license agreements in both Alberta and BC for the construction, operation, and maintenance of the Project.	Application Volume 2, 2-59.	6 - Project Lifecycle	In Progress		
385	Lands and ROW	NEB	Trans Mountain will work with local landowners in the Fraser Valley to determine agricultural practices, including deep sub soiling, to determine depth of cover requirements.	Technical Update No. 1 and Consultation Update No. 2 - Part 2 Table 1.6.3-1	6 - Project Lifecycle	In Progress		
602	Lands and ROW	C.G.L.A.P. - Collaborative Group of Landowners Affected by Pipelines	Trans Mountain will provide landowners with a schedule of work to be conducted on their lands, at least 21 days in advance of the start of construction.	CGIAP_IR_No._2.9d	1 - Prior to Construction	Scoping		
603	Lands and ROW	C.G.L.A.P. - Collaborative Group of Landowners Affected by Pipelines	Trans Mountain commits that its land agents working on the Trans Mountain Expansion Project (TMEP) will complete the Canadian Energy Pipeline Association Land Agent Program.	CGIAP_IR_No._2.9g	1 - Prior to Construction	In Progress		
641	Lands and ROW	City of Coquitlam	Trans Mountain will commit to paying for the costs associated with relocation or alteration of existing Methane collection system if it is required to do so for Trans Mountain Expansion Project (TMEP) construction.	City_of_Coquitlam_IR_No._2.D.5a	1 - Prior to Construction	Scoping		
675	Lands and ROW	City of Abbotsford; City of North Vancouver; Fraser Valley Regional District; NEB	Trans Mountain is prepared to reimburse municipalities for reasonable costs and staff time required to monitor and assist Trans Mountain workers in constructing the Project on municipal lands and in locations where municipal services are located (either parallel to or crossed by Project).	City_North_Vancouver_IR_No._2.3.12.a; City of Abbotsford IR No. 2.3.09a; NEB_IR_No._6.19; This commitment was made since the close of intervenor's evidence in this proceeding; Trans Mountain Letter to Mayor Braun, City of Abbotsford, July 20, 2015.	2 - During Construction	Scoping		

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (k) Number	Additional Comments
732	Lands and ROW	City of Richmond	Should residual impacts or damages remain from construction, or damages result from operations of the pipeline, Trans Mountain would provide commensurate compensation for damages directly related to and caused by the construction or operations of the pipeline.	City _of_Richmond _IR _No._2.2.11	4 - Operations	Scoping		
733	Lands and ROW	City of Burnaby; City of Richmond	Trans Mountain would intend to employ 'actual loss' compensation for any reductions in revenue caused by the construction and operation of the pipeline.	City _of_Richmond _IR _No._2.2.11 City _Burnaby _IR _No._1.35.01b	6 - Project Lifecycle	Scoping		
834	Lands and ROW	Strata NW 313	Trans Mountain will have full-time land agents available throughout construction to liaise between landowners, construction management and contractors.	Strata_NW313_IR_No._2.03	3 - Prior to Operations	In Progress		
893	Lands and ROW	Sikowwhamél First Nation	If the Board determines that the alternative corridors are appropriate and recommends approval of the preferred corridor along with the limited alternative corridor, Trans Mountain will commit to filing with the Board three months in advance of commencing construction its final determination in relation to the alternative corridors identified below.	SFN _IR _No._2.1.1b	1 - Prior to Construction	Superseded by Legal/Regulatory Requirement		Superseded by Regulatory Requirement TPBoR
978	Lands and ROW	Canadian Parks and Wilderness Society - BC Chapter	Subject to regulatory approval by the National Energy Board, further notification to all directly affected tenure and disposition holders will take place in advance of construction activity.	CPAWS _IR _No._1.1.2	1 - Prior to Construction	In Progress		
1,315	Lands and ROW	Township of Langley	Trans Mountain is prepared to reimburse municipalities for reasonable costs and staff time required to monitor and assist Trans Mountain workers in constructing the Project on municipal lands and in locations where municipal services are located (either parallel to or crossed by Project).	Langley _IR _No._2.13.e	2 - During Construction	Scoping		
1,437	Lands and ROW	C.G.L.A.P. - Collaborative Group of Landowners Affected by Pipelines	Trans Mountain is endeavouring to include within the construction workspace agreement sufficient time to construct and restore the land following construction. Should those activities extend beyond the agreed upon schedule and require land and use beyond that term specified in the agreement, Trans Mountain will negotiate additional compensation for the additional term required.	CG LAP _IR _No._2.9j	5 - Post-Construction Monitoring	In Progress		
1,445	Lands and ROW	NEB	Trans Mountain will only install an additional pipeline or pipelines in the Statutory Right-of-Way (SRW) Area with the consent and agreement of the Owner, or, in the absence of such consent and agreement, in accordance with all authorizations and determinations, including with respect to any additional compensation payable, made under the Act.	Application Volume_2, Appendix E, page 6 of 8	1 - Prior to Construction	In Progress		

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Suspended by NEB Condition (x) Number	Additional Comments
1,446	Lands and ROW	NEB	Trans Mountain takes responsibility for returning any lands disrupted during construction to the same, or better condition than existed before construction (within the confines of safe right-of-way management.) Trans Mountain will work with each landowner on this and could involve such things as replanting, appropriate vegetation, landscaping and monitoring for weed invasion. However, Trans Mountain does not take responsibility for private landscaping needs unrelated to construction.	Application Volume 3A, 3A-151.	3 - Prior to Operations	In Progress		
1,447	Lands and ROW	NEB	Trans Mountain will directly notify affected tenure holders so they can select alternate areas for their activities. Compensation, considering various forms, will be provided to affected trappers according to established industry and provincial protocols if reduced fur harvest and lost revenue is proven.	Application Volume 5B, 7-108.	1 - Prior to Construction	In Progress		
1,512	Lands and ROW	Fraser Valley Regional District	Trans Mountain will provide compensation for crop loss for a period based upon the soil and crop type, and anticipated duration for soil and crop productivity to return to pre-construction condition.	FVRD IR No._1.29a	6 - Project Lifecycle	Scoping		
1,603	Lands and ROW	NEB	Trans Mountain will initiate a post-construction dialogue with landowners and leaseholders along the pipeline right-of-way after final clean-up to address and/or resolve any relevant issues. Construction-related issues that are raised during ongoing operation will be addressed by Trans Mountain. Trans Mountain will maintain a database to track landowner and leaseholder consultation information.	Application Volume 6A, 9-4.	5 - Post-Construction Monitoring	Scoping		
1,649	Lands and ROW	Sto:lo Collective	Should businesses experience lost revenue as a direct result of the construction or operations of the Trans Mountain Expansion Project, Trans Mountain would intend to employ 'actual loss' compensation for any reductions in revenue caused by the construction and operation of the pipeline.	Sto:lo Collective Recommendation #73	6 - Project Lifecycle	Scoping		
1,857	Lands and ROW	NEB	Trans Mountain will develop a line list including landowner contact information and listing of all commitments and agreed upon special construction methods for each property.	NEB IR No._1.14a, Application, Volume 3C and Volume 2, Section 5.0	1 - Prior to Construction	In Progress		
1,868	Lands and ROW	NEB	Trans Mountain will develop an execution plan that includes review of Line List to determine commitments to landowners and ensure commitments are met.	NEB IR No._1.14a, Application, Volume 3C and Volume 2, Section 5.1	1 - Prior to Construction	Scoping		
1,879	Lands and ROW	NEB	Trans Mountain will incorporate a line list and landowner commitments into construction contracts.	NEB IR No._1.14a, Application, Volume 3C and Volume 2, Section 5.2	1 - Prior to Construction	Scoping		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition [x] Number	Additional Comments
1.890	Lands and ROW	NEB	Trans Mountain will monitor and record the completion of commitments to landowners by the project land program administration.	NEB IR No._1.14a, Application, Volume 3C and Volume 2, Section 5.3	2 - During Construction	Scoping		
1.901	Lands and ROW	NEB	Trans Mountain will ensure the plans and procedures are followed to ensure appropriate notification is made to each landowner, as required, based on the specific needs of their agricultural land use, are incorporated into the Land Program Execution Plan.	NEB IR No._1.14a, Application, Volume 3C and Volume 2,	1 - Prior to Construction	Scoping		
1.916	Lands and ROW	Canadian Parks and Wilderness Society (CPAWS); NEB	Trans Mountain will contact the following prior to clearing and construction activities, providing maps and schedule information to enable them to select alternate areas for their activities: - trappers of affected registered fur management areas and traplines - guide outfitters in relevant wildlife management units; and - commercial recreation tenure holders.	CPAWS IR No._1.12; Application Volume 5B, 7-108	Section 5.4	Scoping		
1.918	Lands and ROW	BC Ministry of Forests Lands and Natural Resource Operations (MFLNRO)	Trans Mountain will notify all affected mineral, aggregate and oil and gas tenure/disposition holders before construction to coordinate planned activities and secure agreements, as necessary.	BC_MFLNRO_P-IR_No._1.14	1 - Prior to Construction	Scoping		
1.928	Lands and ROW	Stó:lō Collective	Trans Mountain will provide compensation, considering various forms, to private land and property owners according to established industry protocols where losses or damages are proven.	Stó:lō Collective Recommendation #73	6 - Project Lifecycle	In Progress		
2.554	Lands and ROW	Fraser Valley Regional District	Trans Mountain committed to implement Master Municipal Construction Documents (MMCD) guidelines for any engineering requirements for pipeline crossing FVRD infrastructure.	This commitment was made since the close of intervenor's evidence: Email from Brendan Osorio, Lead Project Engineer, UP, re TMEP-FVRD Meeting follow up, sent October 2, 2015 to T. Islam and G. Danieluz, FVRD	1 - Prior to Construction	Scoping		

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
2,677	Lands and ROW	NEB	Trans Mountain will contact trappers of affected registered fur management areas and traplines and guide-outfitters in relevant wildlife management units prior to clearing and construction activities, providing maps and schedule information to enable them to select alternate areas for their activities.	Application Volume 5D 1 - Prior to Construction 6-1	Scoping			
2,950	Lands and ROW	Brian Kingman	Trans Mountain will ensure final alignment of the proposed pipeline route considers the large cedar trees, and opportunities to narrow or align the right-of-way will be investigated and considered with the landowner.	Kingman_B_IIR_No_1. 3a	1 - Prior to Construction	Scoping		
3,058	Lands and ROW	NEB	For site preparation, Trans Mountain will ensure timber and brush disposal options will be subject to agreements with landowners and appropriate government authorities.	Pre-Application Project Description p 18	2 - During Construction	Scoping		
3,496	Lands and ROW	NEB	Trans Mountain will work with local landowners in the Fraser Valley to determine agricultural practices, including deep sub soiling, to determine depth of cover requirements.	Technical Update No. 1 and Consultation Update No. 2 - Part 2 Table 1.6.3-1	6 - Project Lifecycle	In Progress		
3,640	Lands and ROW	Davis LLP	TMEP would work with Nicola Ranch to minimize disturbance to hay production operations and would compensate the landowner where necessary.	Non-Regulatory Commitment	1 - Prior to Construction	In Progress		
3,643	Lands and ROW	City of Kamloops	Trans Mountain will work with the City of Kamloops to relocate the Old Road dog park during construction. The City has identified alternate location near Aviation Way. Will require fencing and some facilities.	Non-Regulatory Commitment	1 - Prior to Construction	Scoping		
3,832	Lands and ROW	Sto:lo Collective	Should businesses experience lost revenue as a direct result of the construction or operations of the Trans Mountain Expansion Project, Trans Mountain would intend to employ 'actual loss' compensation for any reductions in revenue caused by the construction and operation of the pipeline.	Sto:lo Collective Recommendation #73	6 - Project Lifecycle	Scoping		
3,833	Lands and ROW	Sto:lo Collective	Should businesses experience lost revenue as a direct result of the construction or operations of the Trans Mountain Expansion Project, Trans Mountain would intend to employ 'actual loss' compensation for any reductions in revenue caused by the construction and operation of the pipeline.	Sto:lo Collective Recommendation #73	6 - Project Lifecycle	Scoping		
3,845	Lands and ROW	Township of Langley	Details of all crossing of Township of Langley infrastructure will be formalized in crossing agreements.	Iangley_IIR_No_1.112d	1 - Prior to Construction	In Progress		

Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made to	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
349	Marine Shipping	NEB	KMC will screen the tankers nominated to call on the Westridge Marine Terminal to check that they are implementing a volatile organic management plan.	Technical Update No. 1 & Consultation Update No. 2 - Part 5, Part 01, Table 1.6.3-1	4 - Operations	In Progress		VOC Management plans for tankers is an international Maritime Organization (IMO) requirement and part of a vessel meeting necessary local and international regulations.
384	Marine Shipping	Transport Canada; Vancouver Fraser Port Authority DBA Port Metro Vancouver	Trans Mountain will submit its Oil Pollution Emergency Plan for the Westridge Marine Terminal to Transport Canada for review at least six months before terminal operations begin.	Trans Mountain Response to NEB IR TERMPIOL Rot and Outstanding Filings (January 2, 2015) Recommendation 17	3 - Prior to Operations	Superseded by NEB Condition	126	
386	Marine Shipping	NEB	Trans Mountain will continue to work with Western Canada Marine Response Corporation (WCMRC) to implement relevant recommendations from the TERMPIOL process, any recommendations from the Panel and any mandated improvements to existing emergency preparedness and response measures as necessary to address the effects of the Project-related increase in tanker traffic.	Application Volume 8, 8A-50.	6 - Project Lifecycle	Superseded by NEB Condition	91, 133, 144	
387	Marine Shipping	NEB	Trans Mountain is committed to further mitigating potential effects of bilge water releases by using reputable vessel owners and operators who strictly adhere to regulations and ensure continued maintenance of vessel discharge treatment equipment and safety mechanisms.	Application Volume 8A, 8A-435.	4 - Operations	Superseded by NEB Condition	134	This is current a requirement in the Tanker Acceptance Standard (TAS) and will continue to be so in future. NEB Condition 134.
389	Marine Shipping	NEB	Trans Mountain will provide reception facilities at the Westridge Marine Terminal as necessary to service the needs of the Project-related marine vessels.	Application Volume 8A, 8A-432.	4 - Operations	Superseded by Management Plan		
390	Marine Shipping	NEB	Trans Mountain will require all tankers to process and empty their bilges prior to arrival and to have the discharge valve of the bilge water locked while in Canadian waters.	Application Volume 8A, 8A-432.	4 - Operations	Complete		This is already a requirement under the Tanker Acceptance Standard.
391	Marine Shipping	NEB	Trans Mountain will require that a tug would accompany the Project-related tankers for the entire trip through the Strait of Georgia and between Race Rocks and the 12 nautical mile to assist with navigation. The tug escort is an enhancement to existing tug requirements.	Application Volume 8A, 8A-364.	4 - Operations	Superseded by NEB Condition	133, 134	
392	Marine Shipping	NEB	Trans Mountain will require that all Project-related tankers calling at the Westridge Marine Terminal have mandatory tug escort for the entire route between the Westridge Marine Terminal and the Pacific Ocean.	Application Volume 8A, 8A-432.	4 - Operations	Superseded by NEB Condition	133	

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
393	Marine Shipping	Val Veirs; Robyn Allan	Trans Mountain is committed to working with Fisheries and Oceans Canada (DFO) and other stakeholders on implementing the Action Plan for the Recovery of the Southern Resident Killer Whale as well as developing other strategies to assist in southern resident killer whale recovery.	Allan_R_IR_No._1.201 Veirs_V_R_No._1.5	1 - Prior to Construction	Superseded by NEB Condition	132	The Marine Mammal Protection Plan will be filed as per NEB Condition 132.
395	Marine Shipping	City of Burnaby	There will be multiple and redundant communication lines open with the tanker and the pilot onboard to communicate dock approach and weather information which, subject to final design, is expected to include a visual display.	City_Burnaby_IR_No._... 1.26.10e	4 - Operations	In Progress		
396	Marine Shipping	Province of British Columbia	Trans Mountain will provide a comparison of Vessel Traffic Service (VTS) capabilities comparing Canadian Coast Guard to other jurisdictions.	Province_BC_F_IR_No._1.1.50a	7 - No Longer Applicable	Complete		
398	Marine Shipping	Tsawout First Nation	Should the project proceed, Trans Mountain will develop key safety and performance indicators for future enhanced Westridge operations and provide regular updates to the Chamber of Shipping BC (COSBC) that may then be posted to the COSBC website.	Tsawassen_TN_F_IR_No._1.28	4 - Operations	In Progress		Trans Mountain will be engaging with stakeholders in 2018 for this purpose.
400	Marine Shipping	Pacheedaht First Nation	Trans Mountain is committed to working with the Department of Fisheries and Oceans (DFO) and other stakeholders on implementing the "Action Plan for the Recovery of the Southern Resident Killer Whale (SRKW)" as well as developing other strategies to assist in SRKW recovery.	Pacheedaht_FN_IR_N_0._1.05.01	1 - Prior to Construction	Superseded by NEB Condition	132	Trans Mountain investments in regional collaborative initiatives must be reflected in Trans Mountain's filing of NEB Condition 132 (Marine Mammal Protection Plan).

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (k) Number	Additional Comments
401	Marine Shipping	District of West Vancouver	Trans Mountain will follow up with Transport Canada regarding incidents and failures, enforcement and prosecutions the District of West Vancouver is seeking and commits to filing the information with the National Energy Board without delay upon receipt of same from Transport Canada.	District of West Vancouver - Attachment - Table 1.57 (page 17), 1.14 (page 6), 117 (page 7)	3 - Prior to Operations	Complete		
			Trans Mountain will follow up with The Pacific Pilotage Authority regarding the escorting of ships the District of West Vancouver is seeking and commits to filing the information with the National Energy Board without delay upon receipt of same from The Pacific Pilotage Authority.					
			Trans Mountain will follow up with Western Canada Marine Response Corporation (WCMRC) regarding information on what other organizations would assist; the anticipated response times for other organizations; and mutual aid or similar agreements; mutual aid to other organizations, the District of West Vancouver is seeking and commits to filing the information with the National Energy Board without delay upon receipt of same from WCMRC.					
			Trans Mountain will follow up with Vancouver Fraser Port Authority DBA Port Metro Vancouver regarding speed limits the District of West Vancouver is seeking and commits to filing the information with the National Energy Board without delay upon receipt of same from Vancouver Fraser Port Authority DBA Port Metro Vancouver.	Tsawwassen FN - Attachment - Table 1.3ct	4 - Operations	Complete		
402	Marine Shipping	Tsawwassen First Nation	Trans Mountain will follow up with Canada and the Province of BC regarding the information the intervenor is seeking and commits to filing the information with the National Energy Board without delay upon receipt of same from Canada and the Province of BC.					
403	Marine Shipping	Department of Fisheries and Oceans; Transport Canada; Vancouver Fraser Port Authority DBA Port Metro Vancouver	Trans Mountain is committed to continued co-operation with Vancouver Fraser Port Authority DBA Port Metro Vancouver and the Canadian Coast Guard to ensure safety and efficiency of marine traffic including movements within the Movement Restriction Area (MRA). Trans Mountain will continue to discuss the effects of the Project on available transit windows and the movement of vessels in the MRA with Port Metro Vancouver.	Trans Mountain Response to NEB IR TERMPOL Rpt and Outstanding Filings (January 2, 2015) Recommendation 6	4 - Operations	In Progress		

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition # Number	Additional Comments
404	Marine Shipping	NEB	Trans Mountain will provide financial assistance to smaller vessels registered in Western Canada Marine Response Corporation (WCMRC)'s Fishers Oil Spill Emergency Team (FOSET) program to be fitted with Automated Information System (AIS) and radar reflectors, which will aid in located FOSET assets during standard operations, as well as while undertaking response activities and will enhance safety.	Trans Mountain Response to NEB IR TERM POL Rpt and Outstanding Filings (January 2, 2015) Finding 6	4 - Operations	In Progress		WCMRC has included provision of AIS and/or radar reflectors to the Vessels Of Opportunity Program. Owners of vessels will be able to enter their interest via the WCMRC Coastal Response website when it becomes available.
405	Marine Shipping	Transport Canada; NEB	Trans Mountain will notify the appropriate authority if it wishes to alter any Project commitments related to the movement of Project-related tankers, operational parameters, or characteristics, so the authority can review the impacts to safety as a result of the changes.	Trans Mountain Response to NEB IR TERM POL Rpt and Outstanding Filings (January 2, 2015) Recommendation 1	1. Prior to Construction	In Progress	91, 144	
407	Marine Shipping	Department of Fisheries and Oceans; Transport Canada; Vancouver Fraser Port Authority DBA Port Metro Vancouver	Trans Mountain will provide copies of its Port Information and Terminal Operations Manual to Transport Canada, the Canadian Coast Guard, the Pacific Pilotage Authority, and Vancouver Fraser Port Authority DBA Port Metro Vancouver for information at least six months before the start of terminal operations.	Trans Mountain Response to NEB IR TERM POL Rpt and Outstanding Filings (January 2, 2015) Recommendation 15	3 - Prior to Operations	In Progress		The Westridge Marine Terminal Regulations and Operations Guide (WMTROG) will be submitted to the necessary authorities six months prior to operations
409	Marine Shipping	Transport Canada; NEB	The International Safety Guide for Oil Tankers and Terminals (ISGOTT) safety checklist as well as a checklist with additional terminal specific safety items will be included to the updated Terminal Operations Manual, which shall be provided to the TERMPO Review Committee (TRC) 6 months prior to the expanded terminal becoming operational.	Trans Mountain Response to NEB IR TERM POL Rpt and Outstanding Filings (January 2, 2015) Recommendation 12	4 - Operations	In Progress		The ship/shore safety checklist is currently in use at Westridge and will also be added as a reference to a Westridge Marine Terminal Regulations and Operations Guide (WMTROG) that is under development.
410	Marine Shipping	Transport Canada; NEB	Trans Mountain will accept oil tankers of up to Aframax size and always within any limitations set by Vancouver Fraser Port Authority DBA Port Metro Vancouver.	Trans Mountain Response to NEB IR TERM POL Rpt and Outstanding Filings (January 2, 2015) Recommendation 12	6 - Project Lifecycle	Complete		This is already required under the Tanker Acceptance Standard
411	Marine Shipping	Transport Canada; NEB	Trans Mountain will confirm draft mooring procedures as part of real-time simulations to enhance safety. Such procedures will be included to the Terminal Operations Manual.	Trans Mountain Response to NEB IR TERM POL Rpt and Outstanding Filings (January 2, 2015) Recommendation 14	4 - Operations	In Progress		Draft mooring arrangements were developed during engineering. These will be further tested during the pilot training phase and then finalised and included to the Westridge Marine Terminal Regulations and Operations Guide (WMTROG).

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Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
412	Marine Shipping	Transport Canada; NEB	Trans Mountain will continue its existing practice of having a dedicated loading master present at Westridge Marine Terminal, which provides an added measure of safety to cargo transfer operations.	Trans Mountain Response to NEB IR TERM/POL Rpt and Outstanding Filings (January 2, 2015) Finding 23	6 - Project lifecycle	Complete		This will continue as a requirement.
413	Marine Shipping	Transport Canada; NEB	Trans Mountain will continue to use industry best practices related to cargo transfer activities to enhance safety and the protection of the marine environment.	Trans Mountain Response to NEB IR TERM/POL Rpt and Outstanding Filings (January 2, 2015) Finding 26	6 - Project lifecycle	Complete		This will continue as a requirement.
463	Marine Shipping	Transport Canada; NEB	Trans Mountain will require in its Tanker Acceptance Criteria that departing laden Project tankers to extend pilot disembarkation and tethered tug escort requirements to an area in the vicinity of Race Rocks, weather permitting and subject to the requirements identified in a Pacific Pilotage Authority 'Notice to Industry'.	Trans Mountain Response to NEB IR TERM/POL Rpt and Outstanding Filings (January 2, 2015) Finding 18	4 - Operations	Superseded by NEB Condition	134	The Pacific Pilotage Authority (PPA) and British Columbia Coast Pilots (BCCP) have plans in hand to extend the pilot disembarkation point to a location off Race Rocks. Requirement as per the Tanker Acceptance Standard to be filed with NEB Condition 134.
472	Marine Shipping	Department of Fisheries and Oceans; Transport Canada	Once detailed engineering has been developed for the proposed expanded Westridge Marine Terminal, Trans Mountain will provide the Canadian Coast Guard (CCG) with information necessary to evaluate the additional navigation aids that it proposes to establish at the facility and otherwise seek advice and input of the CCG.	Trans Mountain Response to NEB IR TERM/POL Rpt and Outstanding Filings (January 2, 2015) Recommendation 3	1 - Prior to Construction	Complete		Submitted the necessary information to CCG and received their recommendations on navigation aids to be fitted to the new docks.
531	Marine Shipping	Environment Canada	Trans Mountain will continue to identify, select and evaluate potential Environmental stewardship initiatives that align with priority areas of their Environmental Stewardship Program. Trans Mountain remains committed to participating in additional collaborative partnerships to collect data on marine bird abundance, distribution, and diversity in the Marine Regional Study Area (RSA), and welcomes further consultation with Environment Canada and other industry stakeholders on the structure and scope of a monitoring program.	GoC_EG_IR_No._2.0417 a. NEB IR No. 3.036a - Attachment 1, Filing ID A4H1X7).	6 - Project lifecycle	In Progress		Voluntary collaboration with Bird Studies Canada is in development and on track for execution prior to Q3 2017. Trans Mountain has proposed funding for offshore bird monitoring in the Juan de Fuca Strait. The agreement will also support mapping of survey data in contribution to the Salish Sea Marine Bird Atlas. All data will be publicly available online through Bird Studies Canada.

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (k) Number	Additional Comments
533	Marine Shipping	Environment Canada	Trans Mountain is committed to establishing mutual data sharing agreements that support response planning and research initiatives as they relate to marine birds in Burrard Inlet and along the shipping route.	GoC_EC_IR_No._2.047 e	3 - Prior to Operations	In Progress		Trans Mountain and the Port of Vancouver co-funded a marine bird mapping study in Burrard Inlet. The data is "open source," available for download from the Pacific Wildlife Foundation and Bird Studies Canada websites. A voluntary collaboration with Bird Studies Canada has also been proposed for offshore bird monitoring in the Strait of Juan de Fuca. The agreement will also support mapping of survey data in contribution to the Salish Sea Marine Bird Atlas; all data to be publicly available.
541	Marine Shipping	Transport Canada; Vancouver Fraser Port Authority DBA Port Metro Vancouver	Trans Mountain will carry out exercises entailing real time navigation simulation after completion of detailed design; such simulation maneuvers will be for the areas surrounding the Westridge Marine Terminal and will be carried out in consultation with Vancouver Fraser Port Authority DBA Port Metro Vancouver, the Pacific Pilotage Authority, and Bc Coast Pilots.	Trans Mountain Response to NEB IR TERMPOI Rpt and Outstanding Filings (January 2, 2015) Recommendation 4	4 - Operations	In Progress		
730	Marine Shipping	NEB	Kinder Morgan Canada (KMC) remains committed to playing a role in the dialogue on developing a spill monitoring sampling program for chemicals of potential concern in the shipping lanes in Canadian waters, along with other industrial marine traffic users in the Burrard Inlet and Straits of Georgia and Juan de Fuca.	NEB_IR_No._3.023a	3 - Prior to Operations	In Progress		Trans Mountain is currently scoping this commitment through engagement with Transport Canada, the Canadian Coast Guard, Fisheries and Oceans Canada, WCMRC and other local marine organizations.
750	Marine Shipping	Environment Canada	Trans Mountain commits to undertaking surveys onboard randomly sampled tankers at the Westridge Marine Terminal during which time cargo tank covers and associated seals will be checked for leaks of real-time total hydrocarbon (THC) or total volatile organic compounds (TVOC) measurements using a portable monitor. These tests will be carried out by the Loading Master and four such works shall be completed, one per season.	GoC_EC_IR_No._2.071	4 - Operations	Superseded by Management Plan		
783	Marine Shipping	Province of British Columbia	KMC commits to supporting Western Canada Marine Response Corporation's implementation of the enhanced planning standards.	Province_BC_IR_No._2.52	1 - Prior to Construction	Superseded by NEB Condition	91,133	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (A) Number	Additional Comments
835	Marine Shipping	BC Nature and Nature Canada	Trans Mountain will explore options for reducing lighting on Project-related vessels, to the extent that it is feasible with respect to safety and industry regulations.	BC_Nature_Nature_Cd1_a_IR_No._2.16b.2	3 - Prior to Construction	Superseded by NEB Condition	82	Management of the lighting impact of ships is covered in the WMT Light Emissions Management Plan
836	Marine Shipping	City of Vancouver	Vancouver Fraser Port Authority DBA Port Metro Vancouver's Enhancing Ceracean Habitat and Observation (ECHO) Program and the Green Marine's Underwater Noise Committee are two initiatives engaged in working collaboratively with industry to develop future guidelines for reducing underwater noise from large commercial vessels. Trans Mountain is committed to participating in both initiatives. Once such guidelines are available, Trans Mountain shall require project tankers to adopt those as best practice as part of its Tanker Acceptance Standards.	City_of_Vancouver_IR_No._2.07.6a	3 - Prior to Operations	In Progress		<p>Trans Mountain (TM) is a significant supporter of the ECHO Program.</p> <p>To date TM has:</p> <ul style="list-style-type: none"> <li>- Requested the ships' agents to provide updates to vessels and owners about the ECHO Program and also provide the vessels with copies of the Mariners Guide to Whales, Dolphins and Porpoises of Western Canada.</li> <li>- The Westridge Marine Terminal Regulations and Operations Guide (WMTROG) will include information and guidance on reporting requirements for mammal strikes.</li> <li>- The WMTROG will encourage ship owners to participate in VPA's EcoAction Program, and where possible, avail of the new underwater noise incentives introduced in January</li> <li>- Participated with Green Marine's Underwater Noise Committee to develop performance indicators for ships.</li> <li>- Trans Mountain encouraged vessels (owners, ship agents and shippers) to participate in the voluntary vessel slow down trial through Haro Strait in the summer of 2017.</li> </ul>
837	Marine Shipping	City of Vancouver	Trans Mountain is also committed to support the Government of Canada's efforts to establish and enforce marine safety regulations that ensure a world class tanker system, particularly those with similar affect as the Western Canada Marine Response Corporation (WCMRC) enhancements.	City_of_Vancouver_IR_No._2.05.2c	5 - Post-Construction Monitoring	Superseded by NEB Condition	133	
839	Marine Shipping	Elizabeth May	In support of the Trans Mountain Expansion Project, Trans Mountain and Western Canada Marine Response Corporation (WCMRC) have committed to increasing the response capacity to 20,000 tonnes and exceeding the legislated response time requirements.	May_E_IR_No._2.1a	4 - Operations	Superseded by NEB Condition	133	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
861	Marine Shipping	Metro Vancouver	Trans Mountain commits to undertaking surveys onboard randomly sampled tankers at Westridge during which time cargo tank covers and associated seals will be checked for leaks of real-time total hydrocarbon (THC) or total volatile organic compounds (TVOC) measurements using a portable monitor. These tests will be carried out by the Loading Master and four such surveys shall be completed, one per season.	Metro_Vancouver_IR_No._2.2.1	4 - Operations	Superseded by Management Plan		
868	Marine Shipping	Vancouver Fraser Port Authority DBA Port Metro Vancouver	Should Vancouver Fraser Port Authority DBA Port Metro Vancouver develop a particular facet of its EcoAction Program affecting tankers, Trans Mountain will publicize it through its Tanker Acceptance Standard and thereby encourage vessel operators to try and meet the program's standards as far as is possible for the vessels to do so.	PMV_IR_No._2.24c	6 - Project Lifecycle	Superseded by NEB Condition	134	Will be published with the Westridge Marine Terminal Regulations and Operations Guide
887	Marine Shipping	Vancouver Fraser Port Authority DBA Port Metro Vancouver	Trans Mountain is committed to participating and contributing in a positive manner to discussions related to anchorages in Indian Arm should Vancouver Fraser Port Authority DBA Port Metro Vancouver wish to initiate such wider discussions.	PMV_IR_No._2.02.a	6 - Project Lifecycle	In Progress		
907	Marine Shipping	Squamish Nation	Trans Mountain will require tug escort of all project-related tankers for the entire transit from Westridge Marine Terminal to J Buoy.	Squamish_Nation_IR_No._2.05.x	6 - Project Lifecycle	Superseded by NEB Condition	133	
941	Marine Shipping	Washington State Department of Ecology	Trans Mountain will continue to liaise with regulatory authorities such as the US Coast Guard and Washington State Department of Ecology.	WSDOE_IR_No._2.11d	6 - Project Lifecycle	In Progress		Trans Mountain will continue to be active in the maritime and industry communities in Washington State to ensure government agencies responsible for spill prevention and response and relevant stakeholders have project information.
1,451	Marine Shipping	NEB	Trans Mountain will modify for clarity the regulatory compliance section of its tanker acceptance standard item 4.5.1 to read with the following: "The vessel will be built to industry standards and operated in accordance with industry best practices, always compliant with relevant local and international laws and regulations. The vessel will carry AII required and customary certificates of compliance."	NEB_IR_No._4.09	6 - Project Lifecycle	Superseded by NEB Condition	134	
1,453	Marine Shipping	NEB	Trans Mountain will include in its Port Informations and Terminal Operations Manual guidance the reporting requirements for mammal vessel strikes and mammals in distress. The information will be updated for the Fisheries and Oceans Canada (DFO) reporting requirements change in the future to ensure reporting requirements remain consistent with DFO.	NEB_IR_No._4.09	3 - Prior to Operations	Superseded by NEB Condition	132	The Westridge Marine Terminal Regulations and Operations Guide (WMTROG) will be updated to reflect appropriate reporting requirements. This is included as part of the Marine Mammal Protection Program - NEB Condition 132

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
1,469	Marine Shipping	Makah Tribal Council	Trans Mountain is committed to working with a Scientific Advisory Committee to address areas for future research and development on the fate and behaviour of diluted bitumen.	Makah_TC_IR_No._1.1 0a	In Progress			Trans Mountain is participating in efforts to further understanding of oil properties for the betterment of response.
1,470	Marine Shipping	Makah Tribal Council	Trans Mountain, as part of its vessel screening process, will request that the tankers' staff know Marine Communications and Traffic Services (MCTS) contact numbers and the notification procedure.	Makah_TC_IR_No._1.1 6	In Progress			This information will be included in the Westridge Marine Terminal Regulations and Operations Guide (WMTROG)
1,515	Marine Shipping	Vancouver Fraser Port Authority DBA Port Metro Vancouver	Post construction, Trans Mountain will actively discuss and agree with Vancouver Fraser Port Authority DBA Port Metro Vancouver and Transport Canada the modalities of observing real effects of traffic passing the Westridge Marine Terminal, will document those effects and if required will accordingly adjust the terminal's mooring plans in order to ensure the safety of the terminal and any berthed or passing vessels.	Trans Mountain Response to NEB IR TERMPOI Rpt and Outstanding Filings (January 2, 2015) Table A-1	Operations	In Progress		
1,517	Marine Shipping	Province of British Columbia; Transport Canada	During the real time navigation simulation with pilots and tug operators, Trans Mountain will determine the minimum number and type of berthing tugs that will be required by vessels intending to use the expanded terminal and in consultation with Vancouver Fraser Port Authority DBA Port Metro Vancouver and the Pacific Pilotage Authority will include such requirements to the future Port Information and Terminal Operations Manual. This will also form part of Trans Mountain's future Tanker Acceptance Standard and Recommendations 13	Trans Mountain Recommendation 5 Response to NEB IR TERMPOI Rpt and Outstanding Filings (January 2, 2015) (Filing ID AAGSUS) Table A-1	Prior to Operations	In Progress		The navigation simulations will incorporate the use of tugs with participation of local tug operators. Experience from the exercises will be used to determine the level of tug support that would be required for berthing/unberthing at the new dock complex.
1,527	Marine Shipping	Natural Resources Canada	Should Trans Mountain learn that Asian Gypsy Moth eggs are hatching onboard a vessel, whether the vessel is berthed at Westridge terminal or not, Trans Mountain will inform CFIA and request guidance.	GoC_NRCAn_IR_No._2 .123	4 - Operations	In Progress		Procedural information will be provided to Westridge operators via the Westridge Marine Terminal Regulations and Operations Guide (WMTROG).
1,703	Marine Shipping	Environment Canada	Trans Mountain will meet with Environment Canada in April 2014 to discuss a collaborative, industry-wide approach to the development of a long-term monitoring program for marine birds.	EC-P-IR_No._1.19	1 - Prior to Construction	Complete		Meeting with Environment Canada complete. Voluntary collaboration with Bird Studies Canada has been proposed for offshore bird monitoring in the Strait of Juan de Fuca. The agreement will also support mapping of survey data in contribution to the Salish Sea Marine Bird Atlas; all data to be publicly available.

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Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
1.707	Marine Shipping	NEB	Trans Mountain is committed to working with the Department of Fisheries and Oceans (DFO), participating Aboriginal communities, Vancouver Fraser Port Authority DBA Port Metro Vancouver and other stakeholders to identify the most appropriate means of offsetting serious harm to marine fish and fish habitat. Trans Mountain will submit a preliminary marine fish habitat offsetting plan to the NEB in Q3 2014.	NEB_IR_No._1.51	1 - Prior to Construction	Complete		
1.717	Marine Shipping	NEB	Trans Mountain will ensure its Port Information and Terminal Operations Manual is available to oil shippers and their agents in time for them to understand and fully comply with its contents.	TERMPOI_Rpt and Outstanding Filings Recommendation A-1	4 - Operations	In Progress		The Westridge Marine Terminal Regulations and Operations Guide (WMTROG) will be available on-line and also shared with shippers and ship's agents.
1.807	Marine Shipping	NEB	To manage the increase in atmospheric sound levels, Trans Mountain has committed to ensuring that all Project-related tankers and tugboats are fitted with exhaust silencers similar to those already in place. This will limit the sound emitted by all vessels passing through the Marine Regional Study Area (RSA) and calling at the Westridge Marine Terminal. While Trans Mountain cannot eliminate sound from singular events such as horns, Trans Mountain will encourage vessel operators to follow best practices that consider nuisance effects from such activities and attempt to reduce or eliminate those nuisance effects to the greatest extent possible.	Revised Final Argument s. 7.2.2.4 p301	6 - Project Lifecycle	In Progress		Trans Mountain will encourage vessel operators to follow best practices and mitigate nuisance effects via the Westridge Marine Terminal Regulations and Operations Guide (WMTROG) and the Tanker Acceptance Standard (TAS).
1.825	Marine Shipping	NEB	In addition to the navigation marks on the dock complex, Trans Mountain will ensure every time a tanker or barge calls at Westridge, it will be enclosed within an oil-spill boom. The oil-spill boom will be marked with day and night navigation marks and provide another visible means of warning for recreational vessels.	Technical Update #2 - Recreational Boat Traffic p20	6 - Project Lifecycle	Superseded by Management Plan		This is a current practice and will be continued in future.
1.829	Marine Shipping	Tsawwassen First Nation	Should the project proceed, Trans Mountain commits to developing key safety and performance indicators for future enhanced Westridge operations and provide regular updates to the Chamber of Shipping of British Columbia (COSBC) that may then be posted to the COSBC website.	Tsawwassen_FN_F-IR_No._1.28	4 - Operations	Scoping		
2.114	Marine Shipping	NEB	Trans Mountain will develop a tug matrix for inclusion as part of its Tanker Acceptance Standard to prescribe minimum tug capabilities required upon departure of the tanker.	NEB_IR_No._1.59a	3 - Prior to Operations	Superseded by NEB Condition	133, 134	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
2,200	Marine Shipping	NEB	Trans Mountain clarifies and confirms its commitment to continue to have a dialogue on developing a program that would benefit industrial marine users in the project area as follow. With respect to a marine-based spill monitoring and sampling plan for the shipping lanes in Canadian waters, Kinder Morgan Canada (KMC) would like to clarify that its previous response to Province of BC IR No. 1.1.4.a (Filing ID A5Y2Z1; page 108 of 187) indicated "Although Trans Mountain does not own the tankers that call to the Westridge Marine Terminal and is not responsible for all the tanker traffic in the designated shipping lanes, Trans Mountain is committed to continue to have a dialogue on developing a program that would benefit industrial marine users in the project area. The emphasized text was not included in the NEB's Preamble to NEB IR No. 3.023a.	NEB_I_R_No._3.023a Province_B.C._IR_No._1.1.4.a	3 - Prior to Operations	Scoping		
2,223	Marine Shipping	NEB	Trans Mountain will develop a procedure for vessel to vessel transfers. Both vessels will have Westridge Marine Terminal (WMT) Loading Masters on board who will establish and maintain communications prior to and during transfer operations. Vessel to vessel transfer operations will be continuously monitored by WMT operations staff.	NEB_I_R_No._3.063b	3 - Prior to Operations	In Progress		Vessel to vessel transfer is not part of normal operations. Suitable procedures will be developed.
2,228	Marine Shipping	NEB	Trans Mountain will commit to include a section on marine birds in its future Port and Terminal Book, and will be submitted to the Term of Review Committee a minimum of 6 months prior commencement of operations.	NEB_I_R_No._4.011a	3 - Prior to Operations	In Progress		Information will be provided via the Westridge Marine Terminal Regulations and Operations Guide (WMTROG).
2,310	Marine Shipping	T'Sou-ke First Nation	Trans Mountain commits to continue to support air quality initiatives through Vancouver Fraser Port Authority DBA Port Metro Vancouver such as Eco Action to limit marine emissions.	Reply/Argument - Appendix A Comments on NEB Draft Conditions - Condition 19	4 - Operations	In Progress		TM will continue to highlight the Eco Action program of Vancouver Fraser Port Authority (VPA) to all vessels calling Westridge.
2,499	Marine Shipping	Ditidaht First Nation; Pacheedaht First Nation	Trans Mountain will raise awareness among Project tankers about conditions near Swiftsure Bank with Project tanker operators in its Port Information and Terminal Operations Manual.	Reply Evidence 57.9	3 - Prior to Operations	In Progress		
2,705	Marine Shipping	Environment Canada	Trans Mountain commits that routine maintenance at the Westridge Marine Terminal will include checking the water depth alongside each berth every few years, which will be coordinated with periodic routine topside and underwater dock inspections.	EC_P-I_R_No._1.26 line 3	5 - Post-Construction Monitoring	In Progress		This will be included to the scheduled maintenance program.

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
2,739	Marine Shipping	NEB	To mitigate the disruption of use of travelways, Trans Mountain will provide regular updated information on Project-related marine vessel traffic to shipping associations, such as Chamber of shipping.	Application Volume 8A, 8A-367, Application Volume 8A, 8A-388, Application Volume 8B, 6-2; Application Volume 8B, 5-3;	4 - Operations	In Progress		
2,740	Marine Shipping	NEB	To mitigate the effect of increased rail bridge operations, Trans Mountain will provide regular updated information on Project-related marine vessel traffic to CN Rail.	Application Volume 8A, 8A-388; Application Volume 8B, 5-3;	4 - Operations	In Progress		
2,744	Marine Shipping	Termpol Review Committee	Trans Mountain will employ risk mitigation measures for the TMEP operations: Marine terminal personnel who are trained for the purpose.	TR 8C01 Tempol 3.1 - Introduction p16	4 - Operations	In Progress		The current WMT technician training program will be updated to enable continued safe working practices are employed with new equipment and processes
2,745	Marine Shipping	NEB	Trans Mountain will employ risk mitigation measures for the TMEP operations: Fettered tugs and standby tugs to assist the tanker during berthing at the terminal.	Application Volume 8C TR 8C01 Tempol 3.1 - Introduction p16	4 - Operations	In Progress		All tankers must employ pilots and tugs when berthing or unberthing from WMT. This requirement will continue to be enforced in future.
2,747	Marine Shipping	Termpol Review Committee	Trans Mountain will employ risk mitigation measures for the TMEP operations: Loading platform at the berths drained to sloop tanks and treated at shore.	Application Volume 8C TR 8C01 Tempol 3.1 - Introduction p16	4 - Operations	In Progress		
2,751	Marine Shipping	Termpol Review Committee	Trans Mountain will employ risk mitigation measures for the TMEP operations: Overfilling detection at the tanker vessel.	Application Volume 8C TR 8C01 Tempol 3.1 - Introduction p16	4 - Operations	In Progress		All tankers must be fitted with overfill detection, this is checked by the Loading Master as part of checks and inspections. This is accounted for in the Westridge Marine Terminal Regulations and Operations Guide (WMT ROG) and the Tanker Acceptance Standard (TAS).
2,753	Marine Shipping	Termpol Review Committee	Trans Mountain will employ risk mitigation measures for the TMEP operations: Operational procedures to ensure that all systems work adequately prior to cargo transfer.	Application Volume 8C TR 8C01 Tempol 3.1 - Introduction p16	4 - Operations	In Progress		This is part of the Ship/Store Safety Checklist and is checked by Loading Master prior to vessel acceptance, prior to commencing loading, and monitored during loading.
2,754	Marine Shipping	Termpol Review Committee	Trans Mountain will employ risk mitigation measures for the TMEP operations: Operational procedure for safe cargo transfer activities both onboard the ship and at the terminal.	Application Volume 8C TR 8C01 Tempol 3.1 - Introduction p16	4 - Operations	In Progress		Oil Companies International Marine Forum (OCIMF) recommendations and operating best practices are followed with the Loading Master in attendance and monitoring.
2,755	Marine Shipping	Termpol Review Committee	Trans Mountain will employ risk mitigation measures for the TMEP operations: A Loading Master assigned to each loading tanker.	Application Volume 8C TR 8C01 Tempol 3.1 - Introduction p16	4 - Operations	In Progress		A Loading Master is assigned to every vessel transferring cargo at WMT. This practice will continue in future.

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2,756	Marine Shipping	Termpol Review Committee	Trans Mountain will employ risk mitigation measures for the TMEP operations; Fire prevention and protection both onboard the vessel and at the marine terminal.	Application Volume 8C - TR 801 Termpol 3.1 - Introduction p16	4 - Operations	In Progress		Fire prevention and protection onboard the vessel and at the WMT are already part of regular operating practices. There will be upgrades to the WMT systems as part of the expansion of the dock facility.
2,758	Marine Shipping	Termpol Review Committee	Although the use of Ore-bulk-oil (OBO) vessels has decreased since the 1980s it cannot be excluded that these vessel types are also used as oil carriers. However, Trans Mountain will only allow tankers to call at the Westridge Marine Terminal for oil transport.	Application Volume 8C - TR 806 Termpol 3.8 - Casualty Data p17	4 - Operations	In Progress		OBOs are not accepted at WMT. This will be clarified in the updated Tanker Acceptance Standard (TAS) to be filed with the NEB as per Condition 134.
2,762	Marine Shipping	Termpol Review Committee	Prior to any cargo transfers involving a tanker berthed at the terminal, Trans Mountain commits to conducting a two stage tanker acceptance process as follows:	Application Volume 8C - TR 807 Termpol 3.9 - Ship Specifications p15	4 - Operations	Superseded by NEB Condition	134	This vessel acceptance process is currently in place and this will continue in future. NEB Condition 134 Tanker Acceptance Standard (TAS).
2,779	Marine Shipping	Termpol Review Committee	KMC will continue to operate the meteorological station at the Kinder Morgan Westridge Marine Terminal to enhance the safety of mooring vessels during windy conditions. To enable this enhanced safety measure, a site office display can be installed to enable real time observations of weather parameters, particularly wind speed and direction.	Application Volume 8C - TR 808 Termpol 3.10 - Site Plans p48	3 - Prior to Operations	In Progress		
2,928	Marine Shipping	Environment Canada	Trans Mountain will ensure all tankers and barges operating at Westridge Marine Terminal are Vapour Emission Control (VCE)-equipped. This practice will continue in future.	GoC_EG_IR_No._1.067	4 - Operations	Superseded by Legal/Regulatory Requirement		This is already a requirement for all crude oil vessels under the Tanker Acceptance Standard.
3,002	Marine Shipping	NEB	Trans Mountain will continue to provide information about TMEP Project-related shipping to other marine users. Specifically:	NEB IR No._3.008a-Attachment_1	3 - Prior to Operations	Superseded by NEB Condition	131	Trans Mountain has prepared and consulted on an engagement plan that meets the requirements of NEB Condition 131 (Marine Public Outreach).
3,011	Marine Shipping	NEB	- provide regular updated information on Project-related marine vessel traffic to fishing industry organizations, Aboriginal communities and other affected stakeholders, where possible, through the Chamber of Shipping of BC; and - initiate a public outreach program prior to Project operations phase. Communicate any applicable information on Project-related timing and scheduling with fishing industry organizations, Aboriginal communities and other affected stakeholders.	NEB IR No._3.010a-Attachment_1	4 - Operations	In Progress		

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3.013	Marine Shipping	NEB	Trans Mountain will ensure shippers have appropriate processes in place to address vessel damage, gear loss, or injury.	NEB IR No._3.010a-Attachment_1	4 - Operations	Complete		Trans Mountain requires port agents to represent vessel owners in case of vessel damage, gear loss or third party injury. This is currently included in Tanker Acceptance Standard (TAS). An updated version of the TAS will be published as per the requirements of NEB Condition 134.
3.023	Marine Shipping	NEB	Trans Mountain agrees that the protection of Tsartlip First Nation's sensitive aquatic environments is critical. In order to manage potential effects from air, greenhouse gas (GHG) noise (including underwater noise) and bilge discharge related pollution, Trans Mountain has implemented the following mitigation measures:	NEB IR No._3.010a-Attachment_1	4 - Operations	In Progress		These items are all (except specific mention of fitting of silencers) part of the Tanker Acceptance Standard (TAS). TAS also requires "4.8.1"
3,497	Marine Shipping	Environment Canada	Trans Mountain will implement the following mitigation measures at the Westridge Marine Terminal to reduce potential effects from artificial lighting:	GOC_EC_IR_No._2.050	4 - Operations	In Progress		Information will be provided via the Westridge Marine Terminal Regulations and Operations Guide (WMTROG).  The WMTROG objective is to achieve compliance with IESNA recommendation for rural and low density residential areas (Dark Sky Zone L2); this includes berthing lighting design.

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3.850	Marine Shipping	NEB	Trans Mountain agrees that the protection of Tsartlip First Nation's sensitive aquatic environments is critical. In order to manage potential effects from air, greenhouse gas (GHG) noise (including underwater noise) and bilge discharge related pollution, Trans Mountain has implemented the following mitigation measures: <ul style="list-style-type: none"> <li>• All Project-related tankers are required to adhere to federal standards that may reduce air emissions, including standards for bunker fuel.</li> <li>• All Project-related tankers are required to adhere to federal standards that may reduce GHG emissions, including standards for bunker fuel.</li> <li>• All Project-related marine vessels will be fitted with exhaust silencers similar to those already in use through industry standards.</li> </ul>	NEB IR No._3.010a-Attachment_1	4 - Operations	In Progress		
154	Operations	City of Burnaby	Trans Mountain will incorporate expansion of the Burnaby Terminal into its existing storm water monitoring program, whereby Trans Mountain will continue to monitor any flash drainage events in an effort to identify potential effects and implement necessary measures to reduce or avoid Project-related effects to the Eagle Creek watershed.	City_Burnaby_IR_No._1.04.05C, Volume 5A, 7-387.	4 - Operations	In Progress		
262	Operations	Adams Lake Indian Band	In the event that construction-related issues persist past five years of monitoring, the Post-Construction Environmental Monitoring (PCEM) program will continue until measures are considered to be effective and the issue resolved.	AUB_IR_No._1.6.08a	5 - Post-Construction Monitoring		Superseded by NEB Condition 151	
264	Operations	Adams Lake Indian Band	In the unlikely event of a spill that results in contamination of food fish for Aboriginal communities, should residual environmental effects or contamination remain, Trans Mountain would consult with affected Aboriginal communities to identify mutually acceptable in-kind or replacement measures to replace or offset impacts directly related to and caused by the spill.	AUB_IR_No._1.3.38	4 - Operations		Superseded by Management Plan	
281	Operations	BC Parks; NEB	For maintenance and operations purposes, KMC will work with BC Parks to identify roads that may need to be reactivated and will determine which access controls (e.g., gates) may be warranted.	BC Parks boundary adjustment application (August 2014)	4 - Operations	Scoping		
282	Operations	BC Parks; NEB	KMC will ensure that access to any point on the pipeline is available year round in the event of an operational issue or in the unlikely event of a leak.	BC Parks boundary adjustment application (August 2014)	6 - Project Lifecycle	Scoping		

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364	Operations	NEB	Trans Mountain will monitor the condition of the right-of-way in a timely manner after any heavy rainfall events to look for erosion or washout areas and remediate any damage to protect the integrity of the pipeline.	Application Volume 5A, 7-530.	4 - Operations	Superseded by Management Plan		
399	Operations	Tsleil-Waututh Nation	Trans Mountain will conduct a search of records and will file additional information regarding points (5) and (7) of this IR, if that information is available and reliable: (IR: Concerning any spills or releases from the existing Trans Mountain pipeline (5) how much released product made its way into a water body, and (7) the Environmental effects of the release).	Tsleil-Waututh Nation_F-IR_No._12.1.5.01a	1 - Prior to Construction	Complete		
414	Operations	Chris Amy	Trans Mountain will run regular cleaning pigs through the pipeline to mobilize any deposits to prevent internal corrosion. Trans Mountain will perform in-line inspection as outlined in Volume 4C, Section 8.1.4 of the Application to monitor for metal loss due to internal corrosion. Trans Mountain will complete field inspections of any anomalies that meet Trans Mountain's inspection criteria and will complete any required repairs.	Amv_C_IR_No._1.6b	4 - Operations	Scoping		
416	Operations	City of Burnaby	Annual risk assessments will consider internal corrosion, external corrosion, cracking, third party damage, material defects, outside forces and operator error.	City_Burnaby_IR_No._1.46.04_m	4 - Operations	Superseded by Management Plan		
417	Operations	City of Burnaby	Chemical dispersants would not be stored at Westridge Terminal.	City_Burnaby_IR_No._1.26.08b	4 - Operations	In Progress		
418	Operations	City of Burnaby	Depth of cover will be monitored every 5 years during close interval cover will be addressed.	City_Burnaby_IR_No._1.46.04_h	4 - Operations	Superseded by Management Plan		
420	Operations	City of Burnaby	Risk assessments will be performed annually on the pipelines and every 3 years on facilities.	City_Burnaby_IR_No._1.46.04_hh	4 - Operations	Superseded by Management Plan		
421	Operations	City of Burnaby	Trans Mountain will complete a baseline natural hazard assessment of the TMEP system within the first year of operation and incorporate the identified natural hazard sites into the established natural hazard database.	City_Burnaby_IR_No._1.46.04_p	4 - Operations	Scoping		
422	Operations	City of Burnaby	Trans Mountain will monitor corrosion growth rates through successive in-line inspection tool runs to ensure that the pipe remains safe to operate.	City_Burnaby_IR_No._1.46.04_w	4 - Operations	Superseded by Management Plan		
423	Operations	City of Burnaby	Trans Mountain will monitor for metal loss, pipe movement, mechanical damage, cracking and material defects on a nominal 5 year interval using an in-line inspection program.	City_Burnaby_IR_No._1.46.04_n	4 - Operations	Scoping		

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424	Operations	City of Vancouver	Trans Mountain will adaptively manage potential residual effects with changing climate through the Natural Hazards Management Program. During operations of the Project, it is expected that Trans Mountain will be adaptive in their management of the pipeline and schedule maintenance activities to accommodate local environmental conditions and implement the appropriate protection measures to suit local environmental conditions thereby reducing the potential environmental effects.	City_of_Vancouver_IR_No_1.06.02a	4 - Operations	In Progress		
425	Operations	C.G.L.A.P.: Collaborative Group of Landowners Affected by Pipelines	Trans Mountain is committed to provide advance notice in a reasonable and practical manner, and to control work hours to minimize the disruption to the owner's use of their land in accordance with the NEB Operations and Maintenance Activities Guidelines.	CG LAP IR No_2.9c	4 - Operations	Scoping		
426	Operations	Natural Resources Canada	Trans Mountain will monitor flooding advisories and perform additional aerial and ground patrols during high river flow conditions but there are currently no plans to perform real time monitoring of specific river crossing sites.	GOC_NIRCan_IR_No_1_03.7	4 - Operations	Scoping		
428	Operations	New Democratic Party of Canada	Trans Mountain will dispatch personnel for the purpose of preventing spills on a routine basis including to complete integrity digs, preventive maintenance, clearing, signage, inspection, response to unauthorized activity reports near the pipeline, and many other varied tasks.	NDP_IR_No_1.1.1d	4 - Operations	Superseded by Management Plan		
429	Operations	North Shore NOPE	Kinder Morgan Canada will continue to operate a learning management system to track and document all employee training.	NSNOPE_IR_No_R-1.17b	4 - Operations	Superseded by Management Plan		
430	Operations	Upper Nicola Band	Trans Mountain will complete in-line inspections with a high-resolution ultrasonic crack detection tool within two years of start-up of the Daffield to Black Pines segment.	Upper_Nicola_Band_I_R_No_1.08b	4 - Operations	Scoping		
431	Operations	Upper Nicola Band	Trans Mountain will monitor locations with risk of slope movement as part of its Natural Hazard program as outlined in Section 8.15 of Volume 4C of the application. Where recommended as a result of engineering assessments, Trans Mountain will install instruments to monitor slope movement or to monitor pipeline strain to ensure the pipeline is not being damaged by soil movements.	Upper_Nicola_Band_I_R_No_1.08c	4 - Operations	Superseded by Management Plan		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
434	Operations	NEB	Any product moved in the pipeline must meet KMC's tariff requirements which include the following limitations on product qualities:	Part 2 – Consultation Update No. 1, 2-66	4 - Operations	Superseded by Management Plan		
			<ul style="list-style-type: none"> <li>• a maximum temperature of 38°C;</li> <li>• a maximum density of 940 kg/m<sup>3</sup> (specific gravity of 0.94);</li> <li>• a maximum viscosity of 350 centistokes at Reference Temperature;</li> <li>• maximum impurities (bottom sediments and water) of 0.5% of volume; and</li> <li>• maximum Reid Vapour Pressure of 103 kPa.</li> </ul>					
435	Operations	NEB	As is the case on the existing TMPI system, comprehensive integrated procedures will ensure that batches are reliably injected and Trans Mountain Pipeline (ULC) delivered in accordance with pumping instructions issued to the CCOs by the Shipper Services Department.	Part 2 – Consultation Update No. 1, 2-47	4 - Operations	Superseded by Management Plan		
437	Operations	NEB	Trans Mountain will commit to complete integration of all inspection data sets with the final integration to be complete within the first two years of operation or following completion of the dig program for the crack inspection.	NEB_IIR_No._1.89d	4 - Operations	Scoping		
438	Operations	NEB	Trans Mountain will review its existing operations (i.e., staff levels, operations facilities, pipeline protection and integrity programs) and will make appropriate adjustments to support the proposed expanded TMPI system.	Pre-Application Project Description, p 1.	4 - Operations	In Progress		
439	Operations	NEB	Trans Mountain will track GHG emissions in Alberta and British Columbia during the operation of the pipeline once construction has been completed. In compliance with federal and provincial GHG reporting requirements, Trans Mountain will report direct annual operating GHG emissions from facilities which meet or exceed the reporting thresholds.	NEB_IIR_No._1.32	4 - Operations	Superseded by Management Plan		
467	Operations	NEB	If the attributable GHG emissions due to KMC's BC operations in a reporting year exceed the reporting threshold of 10,000 tonnes CO <sub>2</sub> , a GHG report will be prepared and submitted for the Westridge Marine Terminal.	NEB_IIR_No._3.018a	6 - Project Lifecycle	Superseded by Management plan		
508	Operations	NEB	For the new Westridge Delivery Pipelines, Trans Mountain commits to deploying acoustic leak detection tools on a regular basis to ensure that no pinhole leaks are present.	NEB_IIR_No._3.103g	4 - Operations	Scoping		
509	Operations	NEB	Trans Mountain will complete baseline in-line inspection (ILI) surveys for the Westridge Delivery lines in accordance with Section 8 of Volume 4C. (Filing ID A3S11)	NEB_IIR_No._3.103g, Volume 4C, Section 8 (Filing ID A3S11)	4 - Operations	Scoping		

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549	Operations	Environment Canada	Trans Mountain will review the requirements of the Guideline and Specification for Outdoor Lighting at Parks Canada and consider a future project to revise the existing lighting at Jasper Pump Station.	GoC_EC_IR_No._2.134	1 - Prior to Construction	Complete		
567	Operations	Burnaby Residents Opposing Kinder Morgan Expansion - BROKE	Trans Mountain intends to review and update its brochure entitled "Earthquakes and Pipelines: Can they Survive Together" for future Public Awareness Activities.	BROKE_IR_No._2.1e	1 - Prior to Construction	Complete		
616	Operations	City of Burnaby	KMC Operations commits to applying for amendments to Westridge waste discharge permit a minimum of 6 months prior to modifications to the sampling point(s) or drainage area(s) at the facility as it relates to construction.	City_Burnaby_IR_No._2.073b	1 - Prior to Construction	In Progress		
727	Operations	Township of Langley	Trans Mountain commits to maintain pavement cuts for a minimum of one year after the work is completed.	Langley_IR_No._2.19.b	4 - Operations	Scoping		
737	Operations	Edward Farquhar	Trans Mountain is committed to adding additional procedures to more specifically address slack line flow conditions to the existing KMC procedures. KMC will have these procedures completed and in use prior to the operation of the expanded pipeline system.	Farquhar_T_IR_No._2.2.f	3 - Prior to Operations	In Progress		
738	Operations	Edward Farquhar	Trans Mountain is committed to adding additional procedures to more specifically address column separation prior to a pipeline start-up would be useful enhancement to the existing procedures. KMC will have these procedures completed and in use prior to the operation of the expanded pipeline system.	Farquhar_T_IR_No._2.2.h	3 - Prior to Operations	In Progress		
748	Operations	Squamish Nation	Trans Mountain will assess the potential for serious harm resulting from a spill during the operation phase, including appropriate cleanup, mitigation, and potential offset measures if warranted, will be completed on a case-by-case basis, as required.	Squamish_Nation_IR_No._2(c).01.g	4 - Operations	Scoping		
752	Operations	City of Vancouver	Trans Mountain will, in 2015, be installing a second complementary Computational Pipeline Monitoring (CPM) system that will operate in parallel with the existing system. The new CPM system will use a different technology to recognize leaks.	City_of_Vancouver_IR_No._2.09.2i	1 - Prior to Construction	In Progress		
756	Operations	Katzie First Nation	Trans Mountain will provide a safe water supply to Aboriginal groups and individuals during the period that a drinking water advisory is in place to mitigate any effects of the Project on surface and groundwater supply.	Katzie_FN_IR_No._2.2.12.a	1 - Prior to Construction	Scoping		
759	Operations	Katzie First Nation	Trans Mountain is committed to constructing the new pipeline (line 2) in a manner that prevents column separation.	Katzie_FN_IR_No._2.2.13a	2 - During Construction	Scoping		

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767	Operations	Province of British Columbia	Trans Mountain commits to evaluate available technologies as they develop with a goal for continually improving leak detection including non-computational Pipeline Monitoring (CPM) based systems for the Trans Mountain pipeline system and will implement technologies that we determine to be viable and effective for our operations.	Province_BC_IR_No._2 .16e	4 - Operations	Scoping		
769	Operations	Province of British Columbia	Trans Mountain will update its existing Integrity Management Program (IMP) and scope of work document that prescribes the frequency patrol for the entire Trans Mountain pipeline right-of-way as necessary for the Project.	Province_BC_IR_No._2 .17	4 - Operations	Superseded by Management Plan		
770	Operations	Province of British Columbia	Trans Mountain commits to introducing a leak detection procedure directing the Control Centre Operator (CCO) to perform a controlled shutdown of the pipeline when a leak cannot be ruled out in a given time period after initial indication.	Province_BC_IR_No._2 .20	4 - Operations	Complete		
771	Operations	Province of British Columbia	Trans Mountain commits to including the review of shutdown procedures, thresholds, in the consultation program with the Province of BC as part of developing the updated Emergency Management Plan (EMP).	Province_BC_IR_No._2 .20c	3 - Prior to Operations	Scoping		
779	Operations	Province of British Columbia	The Kinder Morgan Canada Inc. Waste Management Plan and Environment Plan will be reviewed and enhanced prior to the in-service date of the expanded pipeline system to ensure the Plans adequately address the needs of the expanded pipeline and addresses all future regulatory requirements.	Province_BC_IR_No._2 .38	3 - Prior to Operations	Superseded by Management Plan		
794	Operations	Upper Nicola Band	As part of its Integrity Management Program, Kinder Morgan Canada has committed to continuing crack assessments and axial flaw assessments on a maximum interval of 5 years following the baseline assessments.	Upper_Nicola_Band_I_R_No._2.09d	6 - Project Lifecycle	Superseded by Management Plan		
823	Operations	Fraser Valley Regional District	KMTC commits to delivering quarterly reports on odour complaints from Sumas Tank Terminal to the Fraser Valley Regional District (FVRD) for the operational lifetime of the Trans Mountain Expansion Project (TMEP).	FVRD_IR_No._2.17b	6 - Project Lifecycle	Complete		
850	Operations	Fraser Valley Regional District	KMC commits to delivering quarterly reports on odour complaints/complaints/air quality from all facilities and pipeline within the Fraser Valley Regional District (FVRD) to the FVRD for the operational lifetime of the Trans Mountain Expansion Project (TMEP).	FVRD_IR_No._2.17	4 - Operations	Complete		
863	Operations	Upper Nicola Band	Through its Pipeline Integrity Management Plan, Trans Mountain will continue to monitor the integrity of all watercourse crossings on the current and expanded Trans Mountain Pipeline system.	Upper_Nicola_Band_I_R_No._2(c).02.p	6 - Project Lifecycle	Superseded by Management Plan		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (k) Number	Additional Comments
875	Operations	NEB	Trans Mountain will run the ultrasonic (USCD) ILI inspection as soon as possible once the pipeline is in service. Trans Mountain does not expect to take the full two years to complete inspections; however, to account for tool availability and other factors that may be outside of Trans Mountain's control, Trans Mountain committed to a 2 year window to complete inspections.	NEB_IR_No._4_42b	4 - Operations	Scoping		
876	Operations	NEB	Trans Mountain will complete inspections on a more frequent basis if fatigue growth calculations show that a shorter inspection interval is required.	NEB_IR_No._4_43a	4 - Operations	Superseded by Management Plan		
931	Operations	Simon Fraser University	Trans Mountain will conduct ambient air quality monitoring at the Westridge Marine Terminal and emissions source tracking of contaminants of potential concern. Contaminants of potential concern that will be directly measured include particulate matter (PM10 and PM2.5), carbon monoxide (CO), nitrogen dioxide (NO <sub>2</sub> ), sulphur dioxide (SO <sub>2</sub> ), hydrogen sulphide (H <sub>2</sub> S) and volatile organic compounds (VOCs).	SFU_IR_No._2.5.19.4	4 - Operations	Superseded by NEB Condition	52	
946	Operations	Peters Band	Trans Mountain will implement all weed and pest treatments on the right-of-way in BC in accordance with the Integrated Pest Management (IPM) Regulation of BC (BC Reg. 604/2004) as part of the BC Integrated Pest Management Act (Government of BC 2003 and 2004).	Peters_Band_IR_No._2(b).2.5c	1 - Prior to Construction	Superseded by Management Plan		
948	Operations	Peters Band	In the unlikely event that released petroleum impacts groundwater, Trans Mountain will implement a remediation program to recover petroleum and treat contaminated water to meet stringent government criteria.	Peters_Band_IR_No._2(b).3.04a	3 - Prior to Operations	Superseded by Management Plan		
997	Operations	Fraser Valley Regional District	Trans Mountain will cover required internal pipeline protection inspector costs within the right-of-way for new Fraser Valley Regional District (FVRD) road and utility crossings.	FVRD_IR_No._1.36c	4 - Operations	Scoping		
1,310	Operations	Squamish Nation	Trans Mountain will commit to deploying acoustic leak detection tools on a regular basis to ensure that no pinhole leaks are present as a further level of precaution.	Squamish_Nation_IR_No._2.12.h	4 - Operations	Scoping		
1,520	Operations	City of Burnaby	Trans Mountain Pipeline ULC (Trans Mountain) will commit to deploying acoustic leak detection tools on a regular basis in the Westridge Delivery lines to ensure that no pinhole leaks are present.	Cty_Burnaby_IR_No._2.007h	4 - Operations	In Progress		
1,522	Operations	Katzie First Nation	Trans Mountain will continue to conduct Westridge loading operations inside a pre-deployed boom, which would contain a release. Additional boom and response equipment, including skimmers, will be maintained on site.	Katzie_FN_IR_No._1.11b	4 - Operations	In Progress		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
1,529	Operations	NEB	The Westridge Marine Terminal will continue to have operations staff on site at all times.	Application Volume 2, 2.22.	4 - Operations	In Progress		
1,596	Operations	Province of British Columbia	Trans Mountain will review its wildlife care requirements for the Project as part of its Emergency Management Program (EMP) consultation with the Province of BC.	Province_BC_IR_No._2.1 Prior to Construction .37	1 - Prior to Construction	Scoping		This will largely be a Contractor commitment except for discussing with the Sto:lo. Affected by NEB Draft Condition 61 (August 2015).
1,640	Operations	Sto:lo Collective	Trans Mountain will engage with Sto:lo representatives prior to commencing construction to discuss any potential issues in regard to the Traffic and Access Control Management Plan (TACMP): a) Routes will be included for construction access. b) Bussing or other worker transport management for construction workers - To be determined upon completion of the detailed engineering and construction, to be part of the proposed TACMP. c) Traffic supervision plans during construction to identify any access routes that have higher than predicted traffic and/or delays - Refer to b. d) Acceptable driving behaviour in S'ólh Téméxw. Minimum standards will be part of the TACMP for personnel driving Project related vehicles which will be a part of the TACMP or the Health and Safety Management Plan for the Project. The Health and Safety Management Plan will be filed with the NEB as per Draft Condition 38, 90 Days prior to the start of construction. e) Schedules for the trucking of heavy loads to avoid peak traffic times and heavily-used intersections. -Refer to b. f) The TACMP (or sub-plans as developed by the Contractor selected for construction) will prohibit no-construction parking/staging areas along key access routes to Big houses, boat launches, trailheads near bathing sites.	Sto:lo Collective Recommendation #60, #66, #82	1 - Prior to Construction	Scoping		
1,817	Operations	Simon Fraser University	Trans Mountain is committed to meeting the requirements of the Environment, Health and Safety Policy (Kinder Morgan Canada Inc., 2012) that is accomplished through the Odour Complaint Investigation and Response Program and various emission reduction measures.	STU IR No._2.5.12.3	4 - Operations	Complete		
1,859	Operations	Hannah Varto	Trans Mountain will require the Control Centre Operator to shut down and isolate the pipeline if the risks determined from this evaluation are moderate or higher in order to reduce potential consequences. A field inspection process will be in place to inspect the pipeline and facilities for possible damage prior to authorizing the restart of the pipeline following a safety shutdown.	Varto_H_IR_No._1.2.E 2.3	4 - Operations	Scoping		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
2.108	Operations	BC Parks	To access the right-of-way KMC will use low-ground-pressure tracked machines to facilitate access year round. For maintenance and operations purposes, KMC will work with BC Parks to identify roads that may need to be reactivated and will determine which access controls (e.g., gates) may be warranted.	08 BC_Parks_IR_5_1a n_2015 (Informal IRs, Request No. 3)	4 - Operations	Scoping		
2.140	Operations	Province of British Columbia	Trans Mountain will investigate and respond to neighbouring water well owner complaints potentially related to the pipeline operations, regardless of available pre- or post-construction testing requirements.	Province_BC_IR_No._1 1.38	4 - Operations	Scoping		
2.147	Operations	Province of British Columbia	As part of its Integrity Management Program, Kinder Morgan Canada has committed to continuing crack assessments and axial flow assessments on a maximum interval of 5 years following the baseline assessments with an objective to detect and repair any features of concern before they become a threat to fail in service.	Province_BC_IR_No._2 2.180	4 - Operations	Scoping		
2.161	Operations	NEB	Trans Mountain will commit to complete integration of all inspection data sets within the first two years of operation or following completion of the dig program for the crack inspection.	NEB_IR_No._1.89d	4 - Operations	Scoping		
2.274	Operations	NEB	Once the Project is in operation, Trans Mountain will cover the costs of Trans Mountain employees required to monitor and assist the City of Edmonton in undertaking facility construction proximate to the expanded Trans Mountain Pipeline system.	NEB_IR_No._6.19	4 - Operations	Scoping		
2.280	Operations	City of Abbotsford	As indicated in City of Abbotsford IR No. 1.07c, Trans Mountain is committed to consulting on the facilities integrity Management plan (FIMP), but Trans Mountain will not seek agreement or approval on the FIMP.	City of Abbotsford IR No. 1.07c; City of Abbotsford IR No. 1.07c	1 - Prior to Construction	Scoping		
2.351	Operations	The City of Edmonton	Trans Mountain will waive the cost of the Kinder Morgan inspecto anytime such inspector is present to monitor work done near the pipeline in Whitemud Drive. Trans Mountain agrees that this is a reasonable request, and is willing to commit to waiving these costs in the circumstances described. Trans Mountain will update its commitment tracking table accordingly, and, as such, a condition on the approval is not necessary.	Reply Argument - Appendix B - Intervenor Proposed Conditions - Conditions 9d	4 - Operations	Scoping		
2.447	Operations	City of Burnaby	Trans Mountain commits to establish its process for the identification of hazards in facilities. In addition to risk assessments which will be conducted every three years, Trans Mountain commits to conduct regular inspection and testing of hazard control measures that will be managed through a computerized maintenance management system.	City_Burnaby_IR_No._ 1.13.04b	4 - Operations	Scoping		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources) of Commitment	Project Stage for Implementation of Commitment	Implementation commitment status	Superseded by NEB Condition (X) Number	Additional Comments
2,495	Operations	Government of Canada	If a drinking water advisory were to be issued as a result of a spill, Trans Mountain will commit to working with the leadership of the Aboriginal community to identify surplus capacity from other drinking water sources in the area, while suitable replacement alternatives are established and implemented.	Reply Evidence 5.2.3.1.3 Human Health Risk Assessment p.45-73 Line 40	4 - Operations	Scoping		
2,506	Operations	City of Burnaby	Trans Mountain will support employment of additional field staff for various operations and maintenance support roles ranging from engineering to administrative. Trans Mountain anticipates that an incremental 40 to 45 operations and maintenance personnel will be required at field locations in BC. The additional field operations and maintenance staff will be recruited sufficiently in advance of the start-up of the expanded TMPL system to allow for appropriate training to take place, including in emergency response.	Reply Evidence 6.2 Stakeholder Engagement - p13 - line 39	4 - Operations	Scoping		
2,567	Operations	NEB	Trans Mountain will ensure each berth will be provided with a spill containment boom sized to encircle an Aframax class vessel. Trans Mountain will ensure loading of a vessel will not start before the deployment of the boom. The boom will remain in place until the loading arms have been retracted and secured.	Application Volume 4A 5. 3.4.4.2.1 p4A-89	4 - Operations	Scoping		
2,590	Operations	NEB	Trans Mountain will ensure all remote pump stations and ancillary facilities (those pump stations and ancillary facilities not located at maintenance bases) in the expanded TMPL system will be visited by operations personnel on a regular basis, with the frequency determined by subjective and quantitative risk assessments and from operating experience, as is the case for the existing TMPL system.	Application Volume 4C 4. 6.3 p4C-15	4 - Operations	Scoping		
2,591	Operations	NEB	Similar to the existing TMPL system, Trans Mountain will commit to staff 24 hours per day, seven days per week and the operations personnel will conduct daily surveillances for the expanded terminals, with the exception of Suncor's terminal.	Application Volume 4C 5. 6.3 p4C-16	4 - Operations	Scoping		
2,594	Operations	NEB	Trans Mountain will use a high-resolution USCD tool to be run in each of the new Line 2 pipeline segments within the first five years of operation.	Application Volume 4C 5. 8.1.4 p4C-27	4 - Operations	Scoping		
2,595	Operations	NEB	Within one year of the new Line 2 pipeline segments entering service, Trans Mountain will complete a baseline in-line inspection (ILI) survey of pipeline geometry and metal loss will be undertaken with a high-resolution tool.	Application Volume 4C 5. 8.1.4 p4C-27	4 - Operations	Scoping		

## Trans Mountain Expansion Project

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2,596	Operations	NEB	The planned in-line inspection (ILI) program for the reactivation of the existing inactive pipeline segments that will form parts of Line 1 is described in Volume 4A, Section 3.6. In addition, Trans Mountain will ensure a high-resolution USCD tool will be run in each of the reactivated pipeline segments within the first two years of operation.	Application Volume 4C s. 8.1.4 p4C-27	4 - Operations	Scoping		
2,864	Operations	City of Coquitlam	Trans Mountain will ensure regular aerial patrols are conducted as part of a pipeline protection program to prevent third party damage to the pipeline from unauthorized ground disturbance activities.	City_Coquitlam_IR_No_1.C.3	4 - Operations	Scoping		
2,866	Operations	City of Coquitlam	Trans Mountain will complete maintenance digs and repairs based on In-line Inspection (ILI) tool analysis results to repair anomalies before they become a threat to failure.	City_Coquitlam_IR_No_1.C.3	4 - Operations	Scoping		
2,867	Operations	City of Coquitlam	Trans Mountain will complete regular cathodic protection (CP) test lead surveys and close spaced surveys to ensure the effective operation of the CP system for corrosion prevention.	City_Coquitlam_IR_No_1.C.3	4 - Operations	Scoping		
2,868	Operations	City of Coquitlam	Trans Mountain will complete regular cleaning pig runs to mobilize any sediments and water that might accumulate in the lines to prevent internal corrosion.	City_Coquitlam_IR_No_1.C.3	4 - Operations	Scoping		
2,896	Operations	City of Vancouver	Trans Mountain will monitor the condition of the right-of-way in a timely manner after any heavy rainfall events to look for erosion or washout areas and remediate any damage to protect the integrity of the pipeline.	City_Vancouver_IR_No_1.0c_02a	4 - Operations	Scoping		
2,906	Operations	NEB	Trans Mountain will make sure requirements for flyover frequency would be assessed once the new pipeline becomes operational and will be in accordance with regulatory requirements.	Application Volume 5A, Technical Update No. 1 and Consultation Update No. 2 - Part 2 Table 1.6.2-1	4 - Operations	Scoping		
3,010	Operations	NEB	Once in operation, Trans Mountain will ensure that at no time will the pipeline be cleaned with water.	NEB_IR_No._3.010a-Attachment_1	4 - Operations	Scoping		
3,506	Operations	City of Abbotsford	Following blasting and construction, a hydrostatic test will be completed to confirm the integrity of the pipeline and a comprehensive integrity program will be implemented to confirm the long-term integrity of the pipeline.	City_of_Abbotsford_IR_No._1.20b	4 - Operations	Scoping		
3,507	Operations	Living Oceans Society	Trans Mountain will implement additional controls to prevent the discharge of hydrocarbons into storm water including, as applicable to the Sumas Terminal: <ul style="list-style-type: none"><li>• Observation by operations personnel before and during storm water draining from secondary containment areas.</li></ul>	Living_Oceans_IR_No._1.28a	4 - Operations	Complete		

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3.508	Operations	Living Oceans Society	Trans Mountain will implement additional controls to prevent the discharge of hydrocarbons into storm water including, as applicable to the Burnaby Terminal: • Observation by operations personnel before and during storm water draining from secondary containment areas.	Living_Oceans_IR_No._1.28a	4 - Operations	Complete		
3.509	Operations	Living Oceans Society	Trans Mountain will implement additional controls to prevent the discharge of hydrocarbons into storm water including, as applicable to the Westridge Marine Terminal: • Observation by operations personnel before and during storm water draining from secondary containment areas.	Living_Oceans_IR_No._1.28a	4 - Operations	Complete		
3.510	Operations	NEB	Trans Mountain will focus efforts during the execution of operations and maintenance programs and procedures, to prevent the alignment of conditions that could lead to a secondary containment pool fire event and the potential consequential effects at the Burnaby Terminal:	NEB_IR_No._4_29c	4 - Operations	Scoping		
3.511	Operations	NEB	Trans Mountain will focus efforts during the execution of operations and maintenance programs and procedures, to prevent the alignment of conditions that could lead to a secondary containment pool fire event and the potential consequential effects at the Sumas Terminal.	NEB_IR_No._4_29c	4 - Operations	Scoping		
3.512	Operations	NEB	Trans Mountain will focus efforts during the execution of operations and maintenance programs and procedures, to prevent the alignment of conditions that could lead to a secondary containment pool fire event and the potential consequential effects at the Edmonton Terminal.	NEB_IR_No._4_29c	4 - Operations	Scoping		
3.513	Operations	Living Oceans Society	Trans Mountain will implement additional controls to prevent the discharge of hydrocarbons into storm water including, as applicable to the Edmonton Terminal: • Observation by operations personnel before and during storm water draining from secondary containment areas.	Living_Oceans_IR_No._1.28a	4 - Operations	Complete		
3.516	Operations	City of Burnaby	As is the current practice, testing at the Burnaby Terminal will be done during weekday daytime periods and the testing will have no impact on residential power or water systems.	City_Burnaby_IR_No._1.25.03d	4 - Operations	Scoping		
3.517	Operations	City of Burnaby	As is the current practice, testing at the Westridge Marine Terminal will be done during weekday daytime periods and the testing will have no impact on residential power or water systems.	City_Burnaby_IR_No._1.25.03d	4 - Operations	Scoping		
3.525	Operations	NEB	The Burnaby Terminal will continue to have operations staff on site at all times.	Application Volume 2,	4 - Operations	In Progress		
3.526	Operations	NEB	The Edmonton Terminal will continue to have operations staff on site at all times.	Application Volume 2,	4 - Operations	In Progress		

## Trans Mountain Expansion Project

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3,648	Operations	City of Surrey	Trans Mountain will maintain any new culverts installed in the City of Surrey.	Non-Regulatory Commitment	2 - During Construction	Scoping		
3,650	Operations	Village of Valemount	Trans Mountain will appoint an Operations liaison to serve on Emergency Services committee.	Non-Regulatory Commitment	4 - Operations	Scoping		
3,651	Operations	Katzie First Nation	Trans Mountain is committed to operating the new pipeline (Line 2) in a manner that prevents column separation.	TMFP / CoE Technical Working Committee Mtg #5 Meeting Minutes, 11/18/2015, Stakeholder	4 - Operations	Scoping		
3,677	Operations	Metro Vancouver	Trans Mountain will clarify process for MV to access water mains and other utilities if they are proximate to the pipeline.	Non-Regulatory Commitment	4 - Operations	Scoping		
3,836	Operations	Simon Fraser University	Trans Mountain is committed to meeting the requirements of the Environment, Health and Safety Policy (Kinder Morgan Canada Inc, 2012) that is accomplished through the Odour Complaint investigation and Response Program and various emission reduction measures.	SFU IR No._2.5.12.3	4 - Operations	Complete		
3,837	Operations	Simon Fraser University	Trans Mountain is committed to meeting the requirements of the Environment, Health and Safety Policy (Kinder Morgan Canada Inc, 2012) that is accomplished through the Odour Complaint investigation and Response Program and various emission reduction measures.	SFU IR No._2.5.12.3	4 - Operations	Complete		
3,838	Operations	Simon Fraser University	Trans Mountain is committed to meeting the requirements of the Environment, Health and Safety Policy (Kinder Morgan Canada Inc, 2012) that is accomplished through the Odour Complaint investigation and Response Program and various emission reduction measures.	SFU IR No._2.5.12.3	4 - Operations	Complete		
3,846	Operations	NEB	Similar to the existing TMPL system, Trans Mountain will commit to staff 24 hours per day, seven days per week and the operations personnel will conduct daily surveillances for the expanded terminals, with the exception of Sumas Terminal.	Application Volume 4C s. 6.3 p4C-16	4 - Operations	Scoping		
3,847	Operations	NEB	Similar to the existing TMPL system, Trans Mountain will commit to staff 24 hours per day, seven days per week and the operations personnel will conduct daily surveillances for the expanded terminals, with the exception of Sumas Terminal.	Application Volume 4C s. 6.3 p4C-16	4 - Operations	Scoping		

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Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
3,848	Operations	NEB	The planned in-line inspection (ILI) program for the reactivation of the existing inactive pipeline segments that will form parts of Line 1 is described in Volume 4A, Section 3.6. In addition, Trans Mountain will ensure a high-resolution USC3D tool will be run in each of the reactivated pipeline segments within the first two years of operation.	Application Volume 4C, 4 - Operations s. 8.1.4 p4c-27	Scoping			
17	Pipeline Construction	City of Abbotsford	Trans Mountain will continue to work with the City of Abbotsford to understand the applicability of its bylaws and standards to the construction of the Project.	City_of_Abbotsford_IR_No._104a	6 - Project Lifecycle	Superseded by NEB Condition	14,49	
36	Pipeline Construction	Fraser Valley Regional District	Trans Mountain commits to developing a dust management plan in co-operation with Fraser Valley Regional District for the section of the pipeline going through the District.	FVRD_IR_No._104a	1 - Prior to Construction	Superseded by NEB Condition	72	
39	Pipeline Construction	Terence Inskip	If the original grade within the construction footprint cannot be restored, the final restoration of the slopes will ensure that a stable slope angle and profile are achieved and that the slopes within the construction footprint are blended/naturalized to the extent practical.	Inskip_T_IR_No._1b	2 - During Construction	In Progress		
42	Pipeline Construction	Regional District of Fraser-Fort George	The determination (if a camp will be built in Valemount) should be made by Q1 of 2015. Trans Mountain commits that pipeline workers will usually be scheduled for six work shifts (Monday through Saturday) and one day off (Sunday) per week. If workers are housed in Valemount, they will be permitted to return home for their day off at their discretion.	RD_of_Fraser-Fort_George_IR_No._1_03b	1 - Prior to Construction	In Progress		
43	Pipeline Construction	Regional District of Fraser-Fort George	Trans Mountain can confirm that all roads directly impacted by Project construction will be restored to their original state once construction has been completed.	RD_of_Fraser-Fort_George_IR_No._1_12h	4 - Operations	Scoping		
44	Pipeline Construction	Regional District of Fraser-Fort George	Trans Mountain will meet the aesthetic standards for construction set by the village of Valemount and the Regional District where doing so will not compromise the Project's operational requirements or conflict with other laws or regulations governing the Project.	RD_of_Fraser-Fort_George_IR_No._1_12k	2 - During Construction	In Progress		
60	Pipeline Construction	NEB	Trans Mountain will use well maintained equipment to reduce air pollution and unnecessary noise and restrict the duration that vehicles and equipment are allowed to sit and idle to less than one hour unless air temperatures are less than 0°C.	Technical Update No. 1 and Consultation Update No. 2 - Part 2 Table 1.6.3-1 page 100	2 - During Construction	Scoping		
62	Pipeline Construction	NEB	Trans Mountain will work with the Merritt airport owner to coordinate construction activity around periods of airport use.	Application Volume 5B, 7,134,	1 - Prior to Construction	In Progress		

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72	Pipeline Construction	NEB	Trans Mountain will burn slash when conditions exist that allow for adequate dispersion of smoke and will observe the appropriate setback distances and other best management practices. In the Lower Fraser Valley where air quality is an issue, Trans Mountain will avoid burning slash. Instead, mulching will be performed in place or slash will be shipped/hauling to an approved disposal location.	Application Volume 5A_7-88.	2 - During Construction	In Progress		
88	Pipeline Construction	Mike Wiegele Helicopter Skiing	Trans Mountain will avoid construction during Resort's winter operating season.	Non-Regulatory Commitment	2 - During Construction	In Progress		
94	Pipeline Construction	Upper Nicola Band	Trans Mountain commits to having drilling fluid pressures and drilling rates monitored at all times during construction for an early indication of circulation loss.	Upper_Nicola_Band_I R_No_2(c).02.s	2 - During Construction	Scoping		
102	Pipeline Construction	NEB	Trans Mountain will employ an "early in/early out" approach by initiating construction activities as early as possible in the winter and working expeditiously to limit late winter activities. Additionally, Trans Mountain will maintain contact with AER during the construction period to advise them of the construction progress and anticipated completion date within Key Wildlife Biodiversity Zones. Construction, routine maintenance and operation activities will be scheduled outside the spring period for caribou.	Application Volume 5A; Technical Update No. 1 and Consultation Update No. 2 - Part 2 Table 1.6.2-1	2 - During Construction	Scoping		
122	Pipeline Construction	NEB	Trans Mountain will employ an "early in/early out" approach by initiating construction activities as early as possible in the winter and working expeditiously to limit late winter activities. Additionally, Trans Mountain will maintain contact with AER during the construction period to advise them of the construction progress and anticipated completion date within Key Wildlife Biodiversity Zones. Construction, routine maintenance and operation activities will be scheduled outside the spring period for caribou.	Application Volume 5A; Technical Update No. 1 and Consultation Update No. 2 - Part 2 Table 1.6.2-1	2 - During Construction	Scoping		

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141	Pipeline Construction	City of Burnaby	Kinder Morgan Canada (KMC) is committed to working with the City of Burnaby to facilitate the restoration of lands to a similar condition that existed prior to construction. KMC is committed to reasonably facilitating the restoration of lands in order to provide any amenities, landscaping and character loss through construction activities where doing so will not compromise operational requirements or conflict with other laws or regulations governing the Project and ongoing operations. KMC is willing to meet with the City of Burnaby to discuss planned and proposed municipal projects or upgrades to infrastructure to consider in the design of the expansion Project.	City_Burnaby_IR_No._1.33.06c	5 - Post-Construction Monitoring	In Progress		
146	Pipeline Construction	City of Burnaby	Trans Mountain commits to share information on City of Burnaby utilities located during existing utility survey.	City_Burnaby_IR_No._1.33.35h	1 - Prior to Construction	In Progress		
226	Pipeline Construction	NEB	Trans Mountain will locate and flag all existing buried utility lines and cables to be crossed by the pipeline prior to the commencement of ground disturbance activities by using "one call" services in addition to direct contact with utility owners.	Application Volume 5B, 3-8.	1 - Prior to Construction	Superseded by NEB Condition	64	
276	Pipeline Construction	BC Parks; NEB	A timber cruise will be conducted prior to construction.	BC Parks boundary adjustment application (August 2014)	1 - Prior to Construction	Scoping		
455	Pipeline Construction	NEB	Trans Mountain will burn slash when conditions exist that allow for adequate dispersion of smoke and will observe the appropriate setback distances and other best management practices. In the Lower Fraser Valley where air quality is an issue, Trans Mountain will avoid burning slash. Instead, mulching will be performed in place or slash will be shipped/hauling to an approved disposal location.	Application Volume 5A, 7-88.	1 - Prior to Construction	In Progress		
460	Pipeline Construction	City of Burnaby; Township of Langley	Where minor roads are crossed that may affect established community use/access routes, Trans Mountain will complete open-cut crossings within one day, to the extent practical.	City_Burnaby_IR_No._1.35.05b; Langley_IR_No._1.14a	2 - During Construction	Scoping		
579	Pipeline Construction	City of Abbotsford	If site conditions develop that require the release of sediment-laden waters to City storm sewers, drains or storm sewers, Trans Mountain will contact and consult with the City of Abbotsford's General Manager of Planning and Development Services or designate.	City_of_Abbotsford_IR_No._2.2.08c	2 - During Construction	Scoping		

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580	Pipeline Construction	Upper Nicola Band	Trans Mountain has developed a preliminary layout for the proposed new facilities at Kingsvale Pump Station, which generally defines the extent of the excavation required. The approximate volume is 10,000 m3. The final layout and associated excavation quantity will be determined during detailed engineering and design, which is expected to take place during 2016, assuming the current overall Project schedule is maintained.	Upper_Nicola_Band_I_R_No._2(c).01.c	1 - Prior to Construction	In Progress		
622	Pipeline Construction	NEB	Trans Mountain commits to complete excavations of all crack-like anomalies on the Hinton to Hargreaves section of line prior to hydrostatic testing and reactivation.	NEB_IR_No._4.43	2 - During Construction	Scoping		
714	Pipeline Construction	Township of Langley	Trans Mountain inspectors will be monitoring construction activities to ensure that grading does not create issues, including drainage.	Langley_IR_No._2.11.a	2 - During Construction	Superseded by NEB Condition	7.2	
801	Pipeline Construction	Upper Nicola Band	Further sampling for Acid Rock Drainage / Metal Leaching (ARD/Ml) characterization and delineation will be completed prior to construction. This additional work will focus on geologic units with "High" and "Moderate" ARD/Ml potential that were not previously sampled and areas where 2013 investigation results indicated the presence of FAG.	Upper_Nicola_Band_I_R_No._2.14	1 - Prior to Construction	Superseded by NEB Condition	5.1	
994	Pipeline Construction	C.G.L.A.P. - Collaborative Group of Landowners Affected by Pipelines	Trans Mountain will provide Landowners a schedule of work to be conducted on their lands, at least 21 days in advance of the start of construction.	CG LAP _IR_No._2.9d	6 - Project Lifecycle	Scoping		
999	Pipeline Construction	Terence Instkip	The portion of the existing right-of-way in the Lac du Bois Protected Area that falls within the construction footprint of the proposed Project will be reconoured to ensure that a stable profile is achieved and that the disturbed area within the construction footprint is blended/naturalized to the extent practical. Trans Mountain will be consulting with BC Parks regarding additional recontouring as a potential benefit/ offset for the Lac du Bois protected area.	Instkip_T_IR_No._1c	2 - During Construction	Scoping		
1,009	Pipeline Construction	Township of Langley	Where possible, excavated material will be stored on the proposed construction footprint (right-of-way and temporary workspaces) during the construction phase before backfilling. Where there is no opportunity to store excavated material due to space constraints, additional space will be secured from the respective abutting and non-abutting landowners or from the Municipality to allow for the temporary storage of excavated material. Additional storage space will be located as close to the respective worksites as practical.	Langley_IR_No._1.19a	2 - During Construction	Scoping		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
1.015	Pipeline Construction	NEB	With respect to water use for camps and construction offices, Trans Mountain will enter into water use agreements with the applicable jurisdictions as the project develops.	Application Volume 58, 7-139.	1 - Prior to Construction	In Progress		Related to water use for the camps and construction offices. Will be reported under NEB Draft Condition 18 (August 2015).
1.021	Pipeline Construction	Regional District of Fraser-Fort George	At locations considered sensitive to vibrations, Trans Mountain will employ specific pipeline construction techniques to minimize such vibrations. This may include modified excavation and backfilling procedures, as well as monitoring of vibrations at the boundary of the construction right-of-way to reasonably ensure that materials already in place are not disrupted.	RD of Fraser-Fort George JR No_1 06b	2 - During Construction	Scoping		
1.614	Pipeline Construction	Sto:lo Collective	Sto:lo representatives will be provided an opportunity to provide input on proposed locations for hydrostatic test water withdrawal and release.	Sto:lo Collective Recommendation #6	1 - Prior to Construction	In Progress		
2.056	Pipeline Construction	BC Parks	To avoid or reduce effects of a drilling mud release on surface water quality, Trans Mountain will continually monitor for sediment release (i.e., turbidity and total suspended solids (TSS)) throughout the crossing construction period. In the event of a release into the watercourse, Trans Mountain will immediately suspend drilling activities and implement measures outlined in the Drilling Mud Release Contingency Plan to reduce effects of drilling mud release into the watercourse. Trans Mountain will report any releases to Department of Fisheries and Oceans (DFO) and BC Ministry of Environment (MOE). Trans Mountain will carry out clean up and monitoring until water quality is returned to existing (background) conditions.	BC Parks Boundary adjustment application (August 2014) Tab B - North Thompson River Provincial Park	2 - During Construction	Superseded by NEB Condition 72		
2.336	Pipeline Construction	City of Abbotsford	Trans Mountain is committed to minimizing its construction footprint through City of Abbotsford parks, but cannot enter into binding agreements at this time due to uncertainty of site conditions and the early stage of detailed engineering and design. Trans Mountain will plan to locate any temporary workspaces (e.g., laydown areas, storage areas) outside of City of Abbotsford park areas and only use what land is necessary to install the pipe safely in the trench.	City of Abbotsford IR No_2.2.04a	1 - Prior to Construction	Superseded by NEB Condition 14,49		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
2,369	Pipeline Construction	City of Coquitlam	To mitigate the issue of overlap in construction schedules between the end of Port Mann Main No. 2 work and the start of construction of the proposed Fraser River horizontal directional drilling (HDD) for the Project, Trans Mountain will change the sequence of large HDD crossings to delay the Fraser River crossing such that the work on the north shore of the Fraser River in preparation for the HDD would not begin until 2017. If the Metro Vancouver project is delayed, then the two construction contractors will manage the interface issues during the construction period.	Reply Evidence 13.7 Port Mann Main No. 2/Colony Farm Regional Park Coquitlam - p3 - line 7	1 - Prior to Construction	Scoping		
2,536	Pipeline Construction	City of Burnaby; Township of Langley	Where minor roads are crossed that may affect established community use/access routes, Trans Mountain will complete open-cut crossings within one day, to the extent practical.	City_Burnaby_IR_No_... 1.35.05b; Langley_IR_No_ 1.14a	2 - During Construction	Scoping		
2,563	Pipeline Construction	NEB	Trans Mountain will commit to clear snow, trees, stumps, brush and other vegetation from the construction right-of-way, temporary work sites and permanent facilities that are not located on existing, previously cleared easements. Timber and brush disposal options will be subject to agreements with landowners and appropriate government authorities.	Application Volume 3A Public Consultation Table 1.7.2 p3A-151	2 - During Construction	Superseded by NEB Condition	7.2	
2,593	Pipeline Construction	NEB	In addition to the hydrostatic testing of the new Line 2 pipeline segments, Trans Mountain will ensure a post-construction in-line inspection (ILI) survey with a caliper tool is performed to identify any construction damage to the pipe that requires repair. The caliper tool will also provide baseline geometry data.	Application Volume 4C s. 8.1.4 p4C-27	3 - Prior to Operations	Scoping		
2,636	Pipeline Construction	NEB	Trans Mountain will reduce the amount of land disturbed by using previously disturbed areas for stockpiles, staging areas and camps, where possible.	Application Volume 5B Table 7.2-2-4 p7-27; Application Volume 5B Table 7.2-4 p7-28; Application Volume 5B s. 7.2.3.6 p7-53	2 - During Construction	Superseded by NEB Condition	7.2	
2,638	Pipeline Construction	NEB	Trans Mountain will enable livestock access to, and use of, improved pasture and hay land areas outside of the footprint that may be isolated by construction activities.	Application Volume 5B Table 7.2-4-2 p7-72	2 - During Construction	Scoping		
2,643	Pipeline Construction	NEB	Trans Mountain will ensure all roads cut open will be fully reinstated to the satisfaction of the road owner.	Application Volume 5B Table 7.2-5-2 p7-122	2 - During Construction	Scoping		
2,650	Pipeline Construction	NEB	Trans Mountain will treat sewage and grey water in a temporary treatment facility, including any related to construction camps, onsite at each facility and hauled to regional facilities for disposal.	Application Volume 5B Table 7.2-5-2 p7-124	2 - During Construction	Scoping		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (if Number)	Additional Comments
2,651	Pipeline Construction	NEB	Trans Mountain will use mitigation at site TMEP-004, located at RK 14 to neutralize any acid that were to be generated from the coal seams. Suggested mitigation includes removal of the coal fragments, or blending of the excavated material with limestone where coal fragments exist. Shake flask extraction data is not available for this site.	Application Volume 5C s. 5.1 p21	2 - During Construction	Scoping		
2,652	Pipeline Construction	NEB	During grading and excavation at site TMEP-019, located at RK 659.5 and approximately 0.05 km south of the proposed pipeline corridor, Trans Mountain will follow recommendations to avoid using the potentially acid generating (PAG) rock in fill areas and use a cover of compacted till or clayey material in cut areas where PAG material is exposed. It will be also be important to optimize the amount of excavated PAG material used as backfill in trenches. This material should be sealed with a cap of compacted till or clay. Any excess material that cannot be backfilled should be stored high and dry at the site under a cover of compacted till or clayey material.	Application Volume 5C s. 5.2 p21	2 - During Construction	Scoping	72	
2,653	Pipeline Construction	NEB	During grading and excavation at site TMEP-026, located at RK 789, approximately 0.3 km west of the proposed pipeline corridor, Trans Mountain will use a cover of compacted till or clayey material in cut and fill areas. Trans Mountain will ensure trenches should be sealed with cap of compacted till or clayey material. On-site storage of potentially acid generating (PAG) rock should be stored under a cover of compacted till or clayey material.	Application Volume 5C s. 5.3 p22	2 - During Construction	Scoping	72	
2,913	Pipeline Construction	Dorothy Doherty	In urban areas, Trans Mountain will cover the new pipeline using all trench excavation spoil materials except for rock material and other materials that would damage the physical structure of the pipe or the pipe coating.	Doherty_D_IR_No_1_11d	2 - During Construction	Scoping		
3,018	Pipeline Construction	NEB	Trans Mountain will employ an "early in/early out" approach by initiating construction activities as early as possible in the winter and working expeditiously to limit late winter activities. Additionally, Trans Mountain will maintain contact with AER during the construction period to advise them of the construction progress and anticipated completion date within Key Wildlife Biodiversity Zones. Construction, routine maintenance and operation activities will be scheduled outside the spring period for caribou.	Application Volume 5A; Technical Update No. 1 and Consultation Update No. 2 - Part 2 Table 1.6.2-1	2 - During Construction	Scoping		
3,101	Pipeline Construction	Regional District of Fraser-Fort George	Trans Mountain commits to treat the former landfill site at RK 522 as a sensitive area during construction operations and implement vibration monitoring in consultation with the Regional District of Fraser-Fort George.	RD_of_Fraser-Fort_George_FIR_No_1_06b	2 - During Construction	No Longer Applicable		Pipeline relocated to avoid impacts to the landfill site.

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
3,552	Pipeline Construction	NEB	Trans Mountain will burn slash when conditions exist that allow for adequate dispersion of smoke and will observe the appropriate setback distances and other best management practices. In the Lower Fraser Valley where air quality is an issue, Trans Mountain will avoid burning slash. Instead, mulching will be performed in place or slash will be shipped/hauled to an approved disposal location.	Application Volume 5A, 7-88.	2 - During Construction	In Progress		
3,603	Pipeline Construction	Province of British Columbia	In the unlikely event that pipeline construction has resulted in diminished water quality or quantity and its directly related to the construction or operation of the pipeline, Trans Mountain will re-establish or replace a potable water supply.	Province_BC_IR_No._11_Prior to Construction 1.38C		In Progress		
3,620	Pipeline Construction	City of Burnaby	Trans Mountain will abide by PPA requirements and fees for its expansion in the City of Burnaby.		Non-Regulatory Commitment	1 - Prior to Construction		
3,654	Pipeline Construction	City of Edmonton	KMC will provide inspection and carry the inspection cost for a KMC Inspector to monitor pipeline safety during construction of the Whitemud Drive expansion.		Non-Regulatory Commitment	2 - During Construction		
3,661	Pipeline Construction	District of Clearwater	TMEP will replace fragile asbestos cement pipes (existing District's water and sanitary lines) prior to mainline construction.		Non-Regulatory Commitment	2 - During Construction		
3,670	Pipeline Construction	City of Chilliwack	KMC commits to using biodegradable hydraulic fluid for the pipeline section from the western limit of Watson Road to the western property line of 45560 South Sumas Road.		Non-Regulatory Commitment	2 - During Construction		
3,691	Pipeline Construction	City of Abbotsford	Trans Mountain will preserve a large cottonwood adjacent western boundary of golf course if it is not on the Trans Mountain ROW and does not pose a safety concern.		Non-Regulatory Commitment	1 - Prior to Construction		
3,693	Pipeline Construction	City of Coquitlam	Trans Mountain will conduct post construction video inspections of all disrupted storm and sanitary service connections in the City of Coquitlam.		Non-Regulatory Commitment	5 - Post-Construction Monitoring		
3,700	Pipeline Construction	City of Chilliwack	Trans Mountain will use biodegradable hydraulic fluid for the pipeline section from the western limit of Watson Road to the western property line of 45560 South Sumas Road.		Non-Regulatory Commitment	2 - During Construction		
3,703	Pipeline Construction	Workshop Participants	Trans Mountain will avoid construction in agricultural areas of the Fraser Valley during irrigation timeframe of August-September.		Non-Regulatory Commitment	2 - During Construction		
3,705	Pipeline Construction	City of Coquitlam	Trans Mountain will address methane in its plans.		Non-Regulatory Commitment	1 - Prior to Construction		
3,711	Pipeline Construction	Metro Vancouver	Trans Mountain will consult with Metro Vancouver regarding infrastructure and utilities prior to construction.		Non-Regulatory Commitment	1 - Prior to Construction		
3,712	Pipeline Construction	District of Clearwater	Trans Mountain will replace old utility pipes for the width of the ROW when crossing pipes during construction.		Non-Regulatory Commitment	2 - During Construction		
3,717	Pipeline Construction	Metro Vancouver	Trans Mountain commits to consult with Metro Vancouver in the development of the Projects construction schedule within the Coquitlam Landfill site.		Non-Regulatory Commitment	1 - Prior to Construction		

Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Superseded by NEB Condition [x] Number	Commitment Status	Additional Comments
12	Pipeline Engineering	Adams Lake Indian Band	Trans Mountain will develop details of the dredge footprint, methods and duration of dredging during detailed engineering design, as well as during construction execution planning and a geotechnical investigation. Trans Mountain will perform sediment sampling for chemical analysis prior to dredging to determine disposal method.	ALIB_IR_No_1.3.01b	1 - Prior to Construction	No longer Applicable		Dredging is no longer required.
19	Pipeline Engineering	City of Abbotsford	Trans Mountain commits to a trenchless crossing of Sumas Mountain Road. If trenchless method is unsuccessful, Trans Mountain commits to consult and coordinate activities with the City of Abbotsford to install the crossing on a low traffic day such as a Sunday to keep disruption at this location to a minimum.	City_of_Abbotsford_IR_No_1.02b	2 - During Construction	Complete		
23	Pipeline Engineering	City of Abbotsford	Trans Mountain will bore under paved and high-use roads, where practical. Where minor roads are crossed that may affect established community use/access routes, Trans Mountain will complete open cut crossing within one day, to the extent practical.	City_of_Abbotsford_IR_No_1.01c		In Progress		
25	Pipeline Engineering	City of Abbotsford	Trans Mountain will commit to winter construction at Ledgewood Golf Course.	City_of_Abbotsford_IR_No_1.25c	1 - Prior to Construction	In Progress		
26	Pipeline Engineering	City of Abbotsford	Trans Mountain will communicate with the City of Abbotsford concerning reclamation of the Sumas Drainage Canal Dike, and any required mitigation to the earthen dike around the Sumas Pump Station.	City_of_Abbotsford_IR_No_1.17a	1 - Prior to Construction	In Progress		
29	Pipeline Engineering	City of Abbotsford	Trans Mountain will monitor the blasting during and post construction to ensure that imposed limits are not exceeded.	City_of_Abbotsford_IR_No_1.20b	2 - During Construction	Scoping		
35	Pipeline Engineering	City of Abbotsford	Trans Mountain commits to working with the City of Abbotsford and the BC Dyking Authority in developing a detailed construction plan, should the Sumas River be constructed via the isolate and trench method.	City_of_Abbotsford_IR_No_2(c).01	1 - Prior to Construction	Complete		
55	Pipeline Engineering	NEB	Trans Mountain will have certified inspectors to monitor welding and non-destructive testing (NDT) activities to ensure compliance to project specifications and procedures. Periodic audits will be performed by third-party welding and NDT specialists employed by Trans Mountain.	Application Volume 4B-20.	2 - During Construction	In Progress		Requirement added to inspection and audit manual and inspection scope of work. Affected by NEB Draft Condition 12 (August 2015).
58	Pipeline Engineering	NEB	Trans Mountain will meet with the governments, industry and local Aboriginal communities with respect to the use of merchantable timber.	Application Volume 5B_7-109.	1 - Prior to Construction	Superseded by Management Plan		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
59	Pipeline Engineering	NEB	Trans Mountain will retain contractors that employ only Canadian General Standards Board certified radiographers and ultrasonic technicians to operate the non-destructive testing (NDT) inspection equipment, and provide the final interpretation of radiographic film and the results of the ultrasonic inspection.	Application Volume 4B-2, General 20.	During Construction	Scoping		
64	Pipeline Engineering	NEB	Where a trenchless crossing is unsuccessful or not feasible and a trench (i.e., isolated if water present/open cut if dry or frozen to the bottom) installation is necessary, Trans Mountain will engage a geotechnical engineer regarding additional mitigation measures to prevent and control terrain instability, as needed, during construction.	Application Volume 5A-7-16.	During Construction	Superseded by NEB Condition	51	
68	Pipeline Engineering	NEB	As a general principle, Trans Mountain will avoid physical disturbances to highways or major roads with high community use. Any minor roads that impact community use or access will be crossed in one day using an open cut method to minimize community effects.	Application Volume 5B-7-132.	During Construction	Superseded by NEB Condition	73, 104	
71	Pipeline Engineering	NEB	Trans Mountain will bore under paved and high-use roads where any physical disturbance would be more than a nuisance.	Application Volume 5B-8-62.	During Construction	Superseded by NEB Condition	73, 104	
76	Pipeline Engineering	NEB	Trans Mountain will implement a range of measures to reduce disturbance to community assets and events. Key mitigation measures include avoiding important community features and assets during right-of-way finalization, narrowing the right-of-way in selected areas, scheduling construction to avoid important community events where possible, communication of construction schedules and plans with community officials, and other governments.	Application Volume 5B-7-55.	Prior to Construction	Superseded by NEB Condition	13, 14, 49, 59, 62, 73	
79	Pipeline Engineering	NEB	Hydrostatic testing (i.e., pressure testing using water) will be used to verify the pipeline integrity after welding is complete. At major watercourse crossings, pipe sections will be pretested before installation. Water will be drawn from suitable sources and returned to the appropriate watersheds in accordance with permit requirements. To minimize the total amount of water withdrawn for test purposes, where practicable, water will be moved along the pipeline segments for reuse in multiple tests. Upon successful test completion, the test sections will be dewatered using pigs (foam or rubber sealing plugs) propelled through the pipeline by compressed air.	Pre-Application Project Description, p 19.	During Construction	Superseded by NEB Condition	113	

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96	Pipeline Engineering	NEB	A photographic report of the three campaigns will be provided as part of Technical Update #2, including relevant photographs with descriptions, showing representative terrain and potential Geohazard in each physiographic region along the proposed route, in support of the findings of the Terrain Mapping and Geohazard Inventory Report. Commitment to reissue the Terrain report and map legend incorporating the above corrections as part of Technical Update #2.	NEB_IR_No_2.096	1. Prior to Construction	Superseded by NEB Condition	16	
99	Pipeline Engineering	NEB	Trans Mountain will attempt to identify problematic conditions prior to the commencement of excavation at all trenched watercourse crossings.	NEB_IR_No_4.08a	1. Prior to Construction	Superseded by NEB Condition	51	
123	Pipeline Engineering	Township of Langley	Trans Mountain will engage with the Township of Langley to identify existing infrastructure and future infrastructure growth plans.	Langley_IR_No_1.12a	1. Prior to Construction	Superseded by NEB Condition	14,49	
130	Pipeline Engineering	Adams Lake Indian Band	In the event that it may be necessary to disturb Potentially Acid Generating (PAG) material during the construction phase of the Project, an Acid Rock Drainage Management Plan (refer to Appendix C of Volume 6B) will be developed prior to construction to ensure that the receiving environment (including fish and fish habitat) is not adversely impacted.	ALIB_IR_No_1.3.16c	1. Prior to Construction	Superseded by NEB Condition	72,51	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
131	Pipeline Engineering	Ashcroft Indian Band; Asini Wachi Nehiyawak Traditional Band; Burnaby Residents Opposing Kinder Morgan Expansion - BROKE; Chris Amy; City of Abbotsford; City of Burnaby; City of Coquitlam; City of Port Moody; City of Surrey; Dorothy Doherty; Edmonton & Area Land Trust; Environment Canada; Fraser Valley Regional District; Kwantlen First Nation; Living Oceans Society; NEB; Nelsonith Indian Band; New Democratic Party of Canada; Province of British Columbia; Robyn Allan; Simpew First Nation; Strata NW 313; T. Buck Suzuki Environmental Foundation; Township BC Parks; NEB	Trans Mountain will submit to the NEB the completed risk assessment for Line 2 in Q3 2014.	NEB_IIR_No_1.81a, Allan_R_IIR_No_1.17b, Amy_C_IIR_No_1.3y, Ashcroft_IIR_No_1.3.4 f, Ashcroft_IIR_No_1.3.4 f, BROKE_IIR_No_1.5d, City of Abbotsford - Attachment - Table, City_of_Abbotsford_IIR_No_1.14a, City_Burnaby_IIR_No_1.07.14 i	1. Prior to Construction	Superseded by NEB Condition	15	Submitted in Technical Update No. 1 (B248-22, A328G5, PDF Page 11 to 37).
132	Pipeline Engineering				BC Parks boundary adjustment (August 2014)	1. Prior to Construction	No Longer Applicable	Commitment no longer applicable - route does not go through Bridal Falls.
133	Pipeline Engineering	City of Abbotsford	Trans Mountain commits to assessing the feasibility of a trenchless disturbance technique in Bridal Veil Falls Provincial Park (BVFFPP) to avoid disturbance to the surface. (Cover letter, September 4, 2014). Geotechnical studies will be carried out in 2015 to support an assessment of the feasibility of this construction method.	Graphs will be provided of spill volumes and valves in relation to High Consequence Areas (HCAs) with the Technical Update No. 1 on August 1, 2014.	Trans Mountain response to City of Abbotsford IIR motion IR No. 1.12c	1. Prior to Construction	Superseded by NEB Condition	17
134	Pipeline Engineering	City of Abbotsford	Trans Mountain will provide a description of the relationship between depth of cover and the potential for 3rd Party Damage in the risk report that will be submitted in Q3 2014.	City_of_Abbotsford_IIR_No_1.12b	1. Prior to Construction	Complete	Submitted in Technical Update No. 1 (B248-18, A328G1, PDF Page 48)	

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135	Pipeline Engineering	City of Abbotsford	Trans Mountain will identify site-specific mitigation measures for parks and trails within the City of Abbotsford during detailed engineering phase and finalization of the pipeline construction right-of-way and included in the Pipeline Environmental Protection Plan.	City_of_Abbotsford_IR_No._1.04b	IR 1 - Prior to Construction	Superseded by NEB Condition		
136	Pipeline Engineering	City of Abbotsford	Trans Mountain is committed to City of Abbotsford input to the detailed engineering and design of Line 2 to minimize impacts and potential delay or disruption to future installations of city infrastructure, including installation of permanent pipeline crossing locations where needed.	City_of_Abbotsford_IR_No._1.03b.ii	IR 1 - Prior to Construction	In Progress		
138	Pipeline Engineering	City of Abbotsford	Trans Mountain will provide centre line shape files to the City of Abbotsford.	City_of_Abbotsford_IR_No._1.03b.iii	IR 1 - Prior to Construction	Superseded by NEB Condition	14,49	
139	Pipeline Engineering	City of Abbotsford; City of Vancouver	A risk assessment for Line 2 will be filed with the Technical Update No. 1 on August 1, 2014.	City of Abbotsford Attachment - Table 1.12 (a) and (b), City of Vancouver - Attachment - Table	IR 1 - Prior to Construction	Superseded by NEB Condition	15	Submitted in Technical Update No. 1 (B248-22, A37865, PDF Page 11 to 37)
143	Pipeline Engineering	City of Burnaby	The feasibility report for horizontal directional drilling (HDD) would be available in early Q4, 2014, and in time for the next round of NEB IR's on December 18, 2014. Trans Mountain would willingly meet with the city of Burnaby ahead of submitting the report to the NEB to share the results and alignment if the HDD or tunnel option is deemed technically feasible.	City_Burnaby_IR_No._1.33.29h	IR 1 - Prior to Construction	Complete		
144	Pipeline Engineering	City of Burnaby	The quality management plan will be developed during the detailed engineering and design phase as per Section 2.7, Volume 4A in Application.	City_Burnaby_IR_No._1.34.04b	IR 1 - Prior to Construction	Superseded by NEB Condition	9	
148	Pipeline Engineering	City of Burnaby	Trans Mountain will commit to consult with the City of Burnaby when the pipeline is adjacent or crossing over City utilities to mutually agree on separation distances so that the city can access its mains for operations purposes.	City_Burnaby_IR_No._1.33.15.a	IR 1 - Prior to Construction	In Progress		
149	Pipeline Engineering	City of Burnaby	Trans Mountain will consider extra depth of cover on the Line 2 pipeline on a site-specific basis.	City_Burnaby_IR_No._1.33.16n	IR 1 - Prior to Construction	Superseded by NEB Condition	16	
150	Pipeline Engineering	City of Burnaby	Trans Mountain will consult with all existing infrastructure owners and endeavour to mitigate any future infrastructure conflicts or impediments.	City_Burnaby_IR_No._1.33.08e	IR 1 - Prior to Construction	In Progress		
152	Pipeline Engineering	City of Burnaby	Trans Mountain will determine final crossing procedures in consultation with City of Burnaby and BC Ministry of Transport and Infrastructure during the detailed engineering and design phase of the Project.	City_Burnaby_IR_No._1.47.03c	IR 1 - Prior to Construction	In Progress		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
155	Pipeline Engineering	City of Burnaby	Trans Mountain will make agreements with and abide by all permit requirements from the Canadian National Railway and the Burlington Northern Santa Fe Railway.	City_Burnaby_IR_No._1.43.02s	1 - Prior to Construction	In Progress		
157	Pipeline Engineering	City of Coquitlam	The City of Coquitlam will be consulted to ascertain site specific design considerations at each culverted watercourse crossing.	City_of_Coquitlam_IR_No._1.C.1c	1 - Prior to Construction	Superseded by NEB Condition	14, 49	
158	Pipeline Engineering	City of Coquitlam	Trans Mountain is continuing to investigate the crossing and will provide an update on routing in the Fraser River crossing area in technical Update No. 1, to be submitted to the NEB in Q3 2014. The update will include additional information and a map of the proposed and alternative corridors being considered.	City_of_Coquitlam_IR_No._A.1	1 - Prior to Construction	Complete		
159	Pipeline Engineering	City of Coquitlam	Trans Mountain is prepared to: <ul style="list-style-type: none"> <li>• work with municipalities in the planning and engineering, and detailed design to accommodate future growth and minimize potential future impacts to existing infrastructure;</li> <li>• pay for reasonable costs to inspect, relocate if needed, and protect their infrastructure during pipeline construction;</li> <li>• work with the municipalities to fulfill federal requirements for pipeline protection including ground disturbance measures imbedded in the NEB crossing regulations; and</li> <li>• construct the Project, and operate it and the existing pipeline in accordance with practices and procedures that are consistent with all other utility service and development infrastructure.</li> </ul>	City_of_Coquitlam_IR_No._1.F.4 City_of_Coquitlam_IR_No._1.F.5 City_of_Coquitlam_IR_No._1.F.6b	6 - Project Lifecycle	Superseded by NEB Condition	14, 49	
160	Pipeline Engineering	Fraser Valley Regional District	Trans Mountain will work with the Fraser Valley Regional District (FVRD) in applying for all permits to undertake such work. In addition, FVRD will be provided an opportunity to review and comment on the terms of reference for a site specific study of the Popkum-Bridal Falls area, however the scope and terms of engagement of the study will remain the purview of the Project.	FVRD_IR_No._1.35c	1 - Prior to Construction	Complete		Trans Mountain submitted on October 21, 2015 to the Fraser Valley Regional District (FVRD) a letter along with a report that represents Geohazard Inventory and Terrain Stability Mapping within Ied Creek to Bridal Falls area along the TMEP alignment, as part of the commitment to work together with FVRD on better understanding the Bridal Falls geotechnical landscape.
161	Pipeline Engineering	Natural Resources Canada	Trans Mountain will implement weld toughness testing of submerged arc welds at minus 5 degrees Celsius (-5°C) temperature.	GOC_NRCan_IR_No._1.10.07b	1 - Prior to Construction	Superseded by NEB Condition	111	
166	Pipeline Engineering	Natural Resources Canada	The Trans Mountain Coating Specifications will be updated during the Detailed Engineering and Design Phase of the Project and will incorporate the requirements of the latest edition of the relevant CSA coating standards at that time.	GOC_NRCan_IR_No._1.10.66can	1 - Prior to Construction	Complete		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
168	Pipeline Engineering	Parks Canada Agency	Trans Mountain will continue to work with Parks Canada and BC Parks as part of the decision making process for reactivation activities, including the identification of site-specific issues and concerns and development of mitigation and restoration measures.	GoC_Parts_IR_No._1_2.2	1 - Prior to Construction	In Progress		
169	Pipeline Engineering	Katzie First Nation	Trans Mountain will not take or remove any land from Surrey Bend Regional Park. Trans Mountain will seek to acquire an easement for the installation and operation of a buried pipeline from the Park authority. Ownership of the land will remain with the Park authority.	Katzie FN_IR_No._1.02a	1 - Prior to Construction	In Progress	7	Superseded by NEB Condition
171	Pipeline Engineering	Metro Vancouver	Trans Mountain will reduce that width to a negotiated minimum, provided that safe operation and maintenance of the new proposed pipeline can be ensured, in locations of restricted right-of-way opportunity.	Metro_Vancouver_IR_No._1.1.2.01b	1 - Prior to Construction	In Progress		
173	Pipeline Engineering	Metro Vancouver	Trans Mountain is willing to work with Metro Vancouver on crossings and proximal work on its infrastructure. Trans Mountain is also willing to accommodate reasonably foreseeable plans for municipal infrastructure in the design and placement of the pipeline.	Metro_Vancouver_IR_No._1.1.1.07b	1 - Prior to Construction	Complete		
174	Pipeline Engineering	Metro Vancouver	Trans Mountain will develop details of the construction methodology, to be used for the pipeline installation through the Coquitlam Landfill, during the Engineering and Detailed Design Phase of the Project.	Metro_Vancouver_IR_No._1.1.2.02b	1 - Prior to Construction	In Progress		
176	Pipeline Engineering	Metro Vancouver	Trans Mountain will work directly with affected municipal, regional and provincial authorities to ensure information and agreements required for specific development authorizations and any specifically identified planning, monitoring or mitigation requirements are in place.	Metro_Vancouver_F_IR_No._1.1.5.09a.i	1 - Prior to Construction	In Progress		
180	Pipeline Engineering	Regional District of Fraser-Fort George	Trans Mountain commits to meeting with the Regional District of Fraser Fort George to discuss construction plans, worker accommodation strategy, and mitigation of potential impacts to the community of Valemount.	RD_of_Fraser-Fort_George_IR_No._1.12	1 - Prior to Construction	In Progress		
181	Pipeline Engineering	Regional District of Fraser-Fort George	Trans Mountain commits to organize a meeting with Regional District of Fraser-Fort George by March 2015 on their concerns about construction near their former landfill site, near Hwy 5 N Valemount, BC.	RD_of_Fraser-Fort_George_IR_No._1.06b	1 - Prior to Construction	No longer Applicable		Pipeline relocated to avoid impacts to the Landfill site
182	Pipeline Engineering	Regional District of Fraser-Fort George	Trans Mountain will continue to consult with BC Ministry of Transportation and Infrastructure to ensure that the proposed pipeline does not interfere with the future expansion of Highway 5.	RD_of_Fraser-Fort_George_IR_No._1.12c	1 - Prior to Construction	In Progress		
184	Pipeline Engineering	Township of Langley	All mainline block valves (MLVs) in the Township of Langley will be automated.	Langley_IR_No._1.05c	2 - During Construction	Complete		

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Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
185	Pipeline Engineering	Township of Langley	Trans Mountain commits to consult with the Township of Langley on its mitigation measures that will be incorporated into the detailed design and engineering to protect groundwater and aquifers.	Langley_IR_No._1.08a	1 - Prior to Construction	Superseded by NEB Condition	94	
186	Pipeline Engineering	Township of Langley	Trans Mountain commits to provide municipalities as-built shape files on location of TMEP Line 2.	Langley_IR_No._1.10a	1 - Prior to Construction	Superseded by NEB Condition	14, 49	
187	Pipeline Engineering	Township of Langley	Trans Mountain will commit to designing and constructing the pipeline, with risk based design employed to manage risks following the principle of As Low as Reasonably Possible (ALARP)	Langley_IR_No._1.08b	1 - Prior to Construction	Superseded by NEB Condition	15, 17, 18	
188	Pipeline Engineering	Upper Nicola Band	An Acid Rock Drainage (ARD) management plan will be developed as part of detailed engineering and design. Trans Mountain will conduct inspections and post-construction seepage sampling at areas where potentially acid generating material has been identified or exposed during construction.	Upper_Nicola_Band_I_R_No._1.03	1 - Prior to Construction	Superseded by NEB Condition	72	
189	Pipeline Engineering	Upper Nicola Band	Prior to reactivation of the segments on Line 1, Trans Mountain will file Leave to Open documentation including documentation of repairs and testing that supports restart of these pipeline segments.	Upper_Nicola_Band_I_R_No._1.04d	3 - Prior to Operations	Scoping		
190	Pipeline Engineering	Upper Nicola Band	Prior to reactivation, Trans Mountain will verify the integrity of the pipeline system through the use of in-line inspection and hydrostatic pressure test.	Upper_Nicola_Band_I_R_No._1.04c	3 - Prior to Operations	Scoping		
192	Pipeline Engineering	NEB	During the detailed engineering and design phase, Trans Mountain will develop a horizontal direction drill specification and provide it to the NEB by September 30, 2014.	NEB_IR_No._1.80d	1 - Prior to Construction	Complete		
193	Pipeline Engineering	NEB	Trans Mountain will submit revised outflow volumes for Line 2 Burnaby – Westridge delivery lines, reflecting revised routing, as well as to provide results for individual and combined drain down volumes in Q3 2014.	NEB_IR_No._1.96a	1 - Prior to Construction	Complete		Submitted in Technical Update No. 1 (B248-23, A32866, PDF Page 2 to 13)
197	Pipeline Engineering	NEB	A revised version of the Terrain report and map legend with the above corrections will be issued.	NEB_IR_No._2.097a	1 - Prior to Construction	Complete		
198	Pipeline Engineering	NEB	A risk management plan will be developed as part of detailed engineering and design, and will be updated as additional site specific information is obtained through detailed investigations, and modified as Geohazard are encountered during construction.	NEB_IR_No._2.099	1 - Prior to Construction	Superseded by NEB Condition	51	
199	Pipeline Engineering	NEB	After the initial in-line inspection (ILI) program, Trans Mountain will mitigate the stream crossing hazards already identified and any other hazards identified during ongoing assessments.	Application Volume 4&4_123.(3.6.5.2)	In Progress			

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200	Pipeline Engineering	NEB	Although no active faults (where rupture has occurred in the last 11,000 years) have been identified in British Columbia, studies will be conducted as part of the detailed engineering and design phase, in an attempt to further confirm the presence or absence of active faults crossing or running close to the route.	Part 1 – Consultation Update No. 1, Volume 4A - Project Design and Execution – Engineering Section 2.9.3	1 - Prior to Construction	Superseded by NEB Condition	69	
201	Pipeline Engineering	NEB	At major watercourse crossings, and other areas where lateral spreading as a result of liquefaction has the potential to occur, the pipeline will be designed to resist the potential ground movement (both transient and permanent) associated with the design level event.	Part 2 – Consultation Update No. 1, Volume 8A, Marine - Marine Transportation Section 4.3.14.1	1 - Prior to Construction	Superseded by NEB Condition	68	
203	Pipeline Engineering	NEB	During the detailed engineering design phase, site specific designs will be undertaken for any Stage 1 watercourses that require scour mitigation designs and any identified as having additional constructability challenges.	NEB_R_No._2.101c	1 - Prior to Construction	Superseded by NEB Condition	65	
207	Pipeline Engineering	NEB	If horizontal directional drilling is used, the depth of cover will be a minimum of 10 m below the deepest part of the Fraser River.	Part 2 – Public Consultation Update No. 1	2 - During Construction	Complete		
208	Pipeline Engineering	NEB	In addition to the mitigation measures at the known priority sites, Trans Mountain will run a high resolution geometry (ll) tool prior to reactivation of the Darfield to Black Pines segment. The geometry tool data will be integrated with the data from the GEOPIG inspections completed in 2001 and 2003 to identify pipe movements that may have been caused by slope instability, river scour, or other geological, geotechnical, or hydrologic phenomena.	Application Volume 4A	2 - During Construction	Scoping		
212	Pipeline Engineering	NEB	Once an optimized valve placement design for line 2 has been developed through the risk-based design process, Trans Mountain will file a written report that summarizes the risk-based design process that was undertaken for valve optimization, and provides the rationale for the final valve placement design. It is Trans Mountain's intent that this report, which will be submitted prior to December 1, 2014, will serve as the written engineering assessment report for valve placement location.	NEB_R_No._2.110c	1 - Prior to Construction	Superseded by NEB Condition	17	
214	Pipeline Engineering	NEB	The new Line 2 pipeline segments will be designed to withstand a one-in-2,475 year seismic event, consistent with current requirements of the National Building Code of Canada.	Application Volume 1, section 2.5.1.	1 - Prior to Construction	In Progress		
215	Pipeline Engineering	NEB	Trans Mountain confirms that bed scour and lateral erosion will be incorporated into the design for crossings.	NEB_R_No._2.102e	1 - Prior to Construction	Superseded by NEB Condition	65	

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216	Pipeline Engineering	NEB	Trans Mountain is committed to install the Line 2 pipeline on or adjacent to the existing TMPL right-of-way to the extent feasible, to minimise environmental and socio-economic effects and facilitate efficient pipeline operations.	NEB_I_R_No._2.043a	1 - Prior to Construction	Superseded by NEB Condition	104	
217	Pipeline Engineering	NEB	Trans Mountain to submit to the NEB by June 16, 2014, Map 1 Set: to show High Consequence Areas (HCAs) provided in Reference ii) or updated HCAs. Trans Mountain to submit to the NEB by June 16, 2014, Map 2 Set: to show areas of geotechnical and seismic hazards, and water crossings.	NEB_I_R_No._1.92b	1 - Prior to Construction	Complete		
219	Pipeline Engineering	NEB	Trans Mountain will complete a pipeline risk assessment and evaluate the need for additional mitigation measures (e.g., valve spacing, deeper burial or thicker-walled pipe) to reduce threats and associated risk to aquifers.	Application Volume 7, 7-76.	1 - Prior to Construction	Superseded by NEB Condition	15	
228	Pipeline Engineering	NEB	Trans Mountain will provide a discussion of how the original design of the existing segments meets the requirements of Line 2 as part of the engineering assessment to be filed as part of Technical Update No. 2. Refer to the response to NEB I.R. No. 2.134d for additional information.	NEB_I_R_No._2.134b	1 - Prior to Construction	Complete		
229	Pipeline Engineering	NEB	Trans Mountain will provide a risk ranking for the various wall thicknesses for the new pipeline segments in Q3 2014.	NEB_I_R_No._1.81b	1 - Prior to Construction	Complete		Submitted in Technical Update No. 1 (B248.18, A378G1, pdf: Page 19 to 20)
230	Pipeline Engineering	NEB	Trans Mountain will provide Project-related standards, specifications, and manuals that are developed during detailed engineering and design phase of the Project, upon their completion. The engineering-related documents will be provided by end of Q1 2015 while the construction-related documents will be provided 60 days prior to start of construction.	NEB_I_R_No._1.76b	1 - Prior to Construction	Complete		
231	Pipeline Engineering	NEB	Trans Mountain will provide to the NEB copies of detailed engineering designs for conditions and circumstances not specially or adequately addressed in CSA Z662 or the Onshore Pipeline Regulations (OPR) as described in the NEB Application Volume 4A, Section 2.9, 60 days prior to the commencement of construction of the mainline pipeline in a particular spread.	NEB_I_R_No._1.77c	1 - Prior to Construction	Complete		
235	Pipeline Engineering	NEB	Trans Mountain will undertake a reassessment of potential outflow volumes using the increased average throughput volumes expected on Line 1 foot expansion.	NEB_I_R_No._2.111	1 - Prior to Construction	Superseded by NEB Condition	18	

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236	Pipeline Engineering	NEB	Where circumstances exist such that the detailed engineering designs cannot be completed during this phase, all outstanding detailed engineering designs will be completed and submitted to the NEB 50 days prior to the commencement of construction of the mainline pipeline in a particular spread.	NEB_IR_No._1.77b	2 - During Construction	Superseded by NEB Condition	104	
241	Pipeline Engineering	NEB	Prior to hydrostatic testing, Trans Mountain will complete inline inspection (llis or smart pigging) of the deactivated segments using a high resolution metal loss tool, a high resolution axial flaw detection tool, and a high resolution geometry tool... Trans Mountain will also inspect the reactivated segments, within the first two years of operation, with a specialized high-resolution ultrasonic tool to verify that no detrimental crack defects were initiated and/or grew as a result of the hydrostatic testing.	Application Volume 4A 2 - During Construction 117.	Scoping			
242	Pipeline Engineering	NEB; Robyn Allan	Trans Mountain will submit the risk results for the two existing active pipe segments that will be incorporated into Line 2 using KMC's risk model for operating pipelines to the NEB in a supplemental filing in Q3 2014.	NEB_IR_No._1.87c Allan_R_IR_No._1.17e	1 - Prior to Construction	Superseded by NEB Condition	15	Submitted in Technical Update No. 2 (B255-38, A4A4F0, PDF Pages 11 to 17, 26 to 29).

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243	Pipeline Engineering	Robyn Allan	<p>Trans Mountain has committed to the following Pipeline integrity management actions for existing pipeline segments in addition to the proposed Line 2:</p> <ul style="list-style-type: none"> <li>For the Reactivation Segments, as committed to in the response to NEB IR No. 1.86:           <ul style="list-style-type: none"> <li>o Trans Mountain will submit to the NEB final engineering assessment by the end of Q3 2014.</li> <li>o Trans Mountain will file a Threat-Based Assessment for the reactivation segments in Q3 2014.</li> <li>o Trans Mountain will submit an updated engineering assessment incorporating the results of the hydrostatic testing and the in-line inspection</li> </ul> </li> <li>For the currently active segments of Line 1 that will form part of Line 2, as committed to in the response to NEB IR No. 1.87:           <ul style="list-style-type: none"> <li>o Submit the risk results for the two existing active pipe segments that will be incorporated into Line 2 using KMC's risk model for operating pipelines in a supplemental filing in Q3 2014.</li> </ul> </li> <li>For the sections of Line 1 that will remain in their current operation as part of that pipeline:           <ul style="list-style-type: none"> <li>o Trans Mountain's pipelines are managed through a Pipeline Integrity Management Program that utilizes regular re-evaluations of risk as the basis for identifying and prioritizing assessment and risk mitigation actions.</li> <li>o The risk assessment is updated on an annual basis to reflect mitigation efforts such as repairs or capital upgrades associated with our Natural Hazards Management Program.</li> <li>o In this regular re-evaluation of risk, High Consequence Areas receive an enhanced weighting in the risk assessment, and a higher priority for any</li> </ul> </li> </ul>	Allan_R_IR_No._1.17e	1 - Prior to Construction	Complete		
244	Pipeline Engineering	Robyn Allan	<p>Trans Mountain will incorporate data collected over the last 60 years on the existing Trans Mountain Pipeline system as input to the hazards and threats in the risk assessment on the Trans Mountain Expansion Project.</p>	Allan_R_IR_No._1.17h	1 - Prior to Construction	Superseded by NEB Condition	15	
245	Pipeline Engineering	Upper Nicola Band; NEB; Robyn Allan; Parks Canada Agency	<p>Trans Mountain will file a Threat-Based Assessment for the Darfield to Black Pines reactivation segment in Q3 2014.</p>	NEB_IR_No._1.86c, GoC_Parks_IR_No.1.108, Upper_Nicola_Band_R_No._1.01a	1 - Prior to Construction	Superseded by NEB Condition	19	Submitted in Technical Update No. 2 (B255-36, A4A4E8).

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246	Pipeline Engineering	Upper Nicola Band; NEB; Robyn Allan; Parks Canada Agency	Trans Mountain will submit the final engineering assessment for the Darfield to Black Pines reactivation section by the end of Q3 2014.	Allan_R_IR_No._1.17e, 1 - Prior to Construction NEB_IR_No._1.86b, GoC_Parts_IR_No._1. 1.08_Upper_Nicola_Band_I R_No._1.01a	1. Prior to Construction	Superseded by NEB Condition	19	
247	Pipeline Engineering	Chris Amy	Geotechnical investigation to support horizontal directional drilling (HDD) along the route will be undertaken in 2014 along Brunette River.	Amy_C_IR_No._1.3u	1 - Prior to Construction	No Longer Applicable		Commitment is no longer applicable as HDD is no longer being considered in proximity to Brunette River. No crossing of Brunette River proposed.
248	Pipeline Engineering	British Columbia Hydro and Power Authority	Trans Mountain commits that on the new sections of Line 2 to design the crossing of designated BC Hydro access tracks to allow a typical BC Hydro work vehicle (normally a BCL-625 design truck) to cross the TMEP pipeline while in operation without BC Hydro needing to take additional measures.	BC_Hydro_IR_No._1.3. 3.3	1 - Prior to Construction	In Progress		
249	Pipeline Engineering	British Columbia Hydro and Power Authority	Trans Mountain commits to work with BC Hydro over the next five months (May to October, 2014) to agree how potential impacts to BC Hydro infrastructure and BC Hydro's existing Right-of-Way (ROW) rights will be addressed as per response to BC Hydro IR No. 1.2.2.2.	BC_Hydro_IR_No._1.1. 1.5	1 - Prior to Construction	Complete		
251	Pipeline Engineering	British Columbia Hydro and Power Authority	Trans Mountain confirms that it intends, where practical, to observe BC Hydro's 30 Metre Separation Requirement, but Trans Mountain also recognizes that there are specific route locations where corridor constriction, as a result of terrain and/or adjacent development, will make this requirement impractical.	BC_Hydro_IR_No._1.1. 1.2	1 - Prior to Construction	In Progress		
252	Pipeline Engineering	British Columbia Hydro and Power Authority	Trans Mountain is committed to continued engagement with BC Hydro in the detailed engineering and design of the pipeline and mitigation of potential adverse effects.	BC_Hydro_IR_No._1.1. 1.4	1 - Prior to Construction	Superseded by NEB Condition	50	Trans Mountain has facilitated regular interface meetings with BC Hydro throughout 2015 and plan to continue in 2016 until all TMEP/BC Hydro interface issues are resolved.
254	Pipeline Engineering	NEB	Prior to reactivating the pipeline segments, Trans Mountain will run an axial flaw detection (AFD) inline inspection (ILI) tool that is able to identify axially oriented features such as corrosion grooves, gouges and open cracks... Once the ILI results are received, Trans Mountain will do a number of digs to verify the tools' sizing accuracy and to assess any anomalies.	Application Volume 4A/2 - During Construction 119.	Scoping			

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275	Pipeline Engineering	Elizabeth May; City of Abbotsford; City of Burnaby; BC Nature and Nature Canada; Province of British Columbia; NEB	A preliminary Geohazard assessment is currently being completed and will be provided as part of the risk assessment on Line 2 in Q3 2014.	NEB_IR_No._1.79b, BC_Nature_Nature_Cd_Construction_a_IR_No._1.19a, City_Burnaby_IR_No._1.46.04_S, City_Burnaby_IR_No._1.33.34a, City_of_Abbotsford_IR_No._1.13a, May_E_IR_No._1.5a, Province_BC_F_IR_No._1.101a	1 - Prior to Construction	Superseded by NEB Condition	15, 51, 65, 68, 66, 69	
278	Pipeline Engineering	BC Parks; NEB	All provincial parks, protected areas and recreation areas will be traversed with 11.8 mm wall thickness pipe. All major watercourse crossings in parks and protected areas will be constructed using heavy wall pipe. The McQueen Creek crossing will be 14.7mm wall thickness pipe. The Clearwater River will be 19.0 mm extra heavy wall thickness pipe as the pipeline is proposed to be installed by a horizontal directional drilling (HDD) method. The extra heavy wall thickness is required for larger leads imposed during installation and during the pipe pull and finished pipeline profile in the bore hole. If the Clearwater River HDD proves to be unsuccessful then the contingency in-stream design would be implemented with a wall thickness of 14.7mm or the 19.0 mm thick pipe planned for the HDD if the pipe had already been welded into a pipe string in preparation for pipe pulling.	BC Parks boundary adjustment application (August 2014)	2 - During Construction	Superseded by NEB Condition	67	
466	Pipeline Engineering	NEB	Trans Mountain will work diligently with the affected First Nations and will advise the NEB on or before May 1, 2015 as to whether an agreement regarding on-reserve routing has been reached.	NEB_IR_No._3.017a, NEB_F-IR_No._3.017a	1 - Prior to Construction	Superseded by NEB Condition	7	
491	Pipeline Engineering	NEB	Trans Mountain will complete the hydraulic analyses for the Line 1 and Line 2 atypical flow rate scenarios and start-up and shut-down conditions during the detailed engineering and design phase, planned for 2016.	NEB_IR_No._3.051a.3	1 - Prior to Construction	In Progress		
492	Pipeline Engineering	NEB	Trans Mountain will complete a transient analyses for Line 1 and line 2 to confirm that pressures will remain within required limits during sudden changes in operating conditions.	NEB_IR_No._3.051b	1 - Prior to Construction	In Progress		

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493	Pipeline Engineering NEB		Trans Mountain will incorporate all of the results of the hydraulic studies, including the detailed transient analyses, into the Project design by the end of the detailed engineering and design phase in late 2016 or early 2017. The operating limits and protective device settings will be based on the hydraulic studies and will be finalized in sufficient time to allow for application during commissioning.	NEB_IR_No._3.051c	1 - Prior to Construction	In Progress		
506	Pipeline Engineering NEB		Trans Mountain will conduct additional field investigations for 5 sites identified on the two pipeline segments proposed for reactivation as part of the Natural Hazards Management Program.	NEB_IR_No._3.102a	1 - Prior to Construction	In Progress		
545	Pipeline Engineering Eric Bickle		Trans Mountain will route the proposed pipeline along the western border of Redwoods Golf course in such a way that will not result in removal of trees that buffer the Walnut Grove residents from the golf course and in such a way that the 30m "Safety zone" identified in s. 112 of the National Energy Board Act would not affect the residential properties bordering Redwoods Golf Course.	Bickle_E_IR_No._1.1.1j	1 - Prior to Construction	Complete		
546	Pipeline Engineering Environment Canada		Engineering Critical Assessment (ECA) based flaw acceptance criteria will be made available to Natural Resources Canada when available.	GoC_EC_IR_No._2.1261	1 - Prior to Construction	Superseded by NEB Condition	111	
547	Pipeline Engineering Natural Resources Canada		Trans Mountain to provide Natural Resources Canada (NRCan) a copy of TMEP Coating Specifications by 30 June 2015.	GoC_NRCAN_IR_No._2_130.2.	1 - Prior to Construction	Complete		
558	Pipeline Engineering Art Jackson O/A Alpine Art		For the Project, Trans Mountain will meet or exceed both the minimum cover requirement specified in CSA Z662 and apply the province of British Columbia's more conservative one in two hundred year designated flood mandate to all of the proposed watercourse crossings.	Alpine_Art_IR_No._2.2	1 - Prior to Construction	Complete		
560	Pipeline Engineering City of Burnaby, NEB		Trans Mountain will complete geotechnical site investigations at sites with "high" and "moderate" liquefaction potential in 2015 and 2016. The investigations will be staged: higher-priority sites will be targeted first, followed by lower-priority sites if warranted by the results at higher-priority sites.	City_Burnaby_IR_No._2(d).2.d	1 - Prior to Construction	Superseded by NEB Condition	68	
561	Pipeline Engineering Squamish Nation		Transmountain will evaluate the magnitude of the expected imposed tensile and compressive strains on the pipe due to lateral spreading and other Geohazard along the pipeline.	Squamish_Nation_IR_No._2(d).13.(a).a	1 - Prior to Construction	Complete		
563	Pipeline Engineering BC Nature and Nature Canada		Trans Mountain affirms its commitment to avoid the use of Colony Farm's land to the maximum extent practical.	BC_Nature_Nature_Co_a(IR_No._2.4)d.1	1 - Prior to Construction	Complete		
564	Pipeline Engineering Burnaby Residents Opposing Kinder Morgan Expansion - BROKE		Liquefaction and lateral spreading analysis and geotechnical report for sites with "very high" liquefaction potential have been underway and will be completed and Trans Mountain will seek leave to file with the NEB by March 2015	BROKE_IR_No._2.1b	1 - Prior to Construction	Superseded by NEB Condition	68	

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565	Pipeline Engineering	Burnaby Residents Opposing Kinder Morgan Expansion - BROKE	Site specific subsurface investigations for "high" and "moderate" liquefaction potential sites along the corridor will be performed in a phased approach on select sites starting spring/summer 2015, and will be based on findings from the investigation of the "very high" liquefaction potential sites and the potential for impact to the pipeline.	BROKE_IR_No._2.1b	1 - Prior to Construction	Complete		
566	Pipeline Engineering	Burnaby Residents Opposing Kinder Morgan Expansion - BROKE	If a specific fault poses an unacceptable risk to the project, Trans Mountain will develop a fault-specific crossing design to mitigate risk to an acceptable level.	BROKE_IR_No._2.1c	1 - Prior to Construction			Superseded by NEB Condition 69
568	Pipeline Engineering	Burnaby Residents Opposing Kinder Morgan Expansion - BROKE	A study of the potential activity of faults crossing the proposed route in Lower Mainland and Fraser Valley has been commissioned by Trans Mountain, and is currently being undertaken by Drs. John Clague and Doug Stead of the Department of Earth Sciences at Simon Fraser University and is expected to be complete by the end of Q1 2015.	BROKE_IR_No._2.5c	1 - Prior to Construction	Complete		
570	Pipeline Engineering	SzTumminus First Nation	Trans Mountain tested sites in areas adjacent to the Fraser River in May 2015. Trans Mountain is committed to assessing and using the results of the site-specific testing to refine the estimates for the frequency of loss of containment and update the project-wide risk assessment.	SzTumminus_FN_IR_No._1 - Prior to Construction		In Progress		
571	Pipeline Engineering	City of Abbotsford	Trans Mountain commits to working with the City of Abbotsford to define terms of reference defining the roles, responsibilities, and appropriate timelines related to ongoing engagement activities as the Project proceeds through detailed engineering, construction planning and in-service; should the proposed project be approved.	City_of_Abbotsford_IR_No._2.1.02a/b	6 - Project Lifecycle	In Progress		
573	Pipeline Engineering	City of Abbotsford	Trans Mountain is committed to and will continue to work with the city of Abbotsford as it develops its construction communication plans through the Technical Working Group.	City_of_Abbotsford_IR_No._2.2.03b	1 - Prior to Construction	In Progress		
574	Pipeline Engineering	City of Abbotsford	Trans Mountain will commit to working with the City of Abbotsford to identify and limit the amount of workspace used through the City of Abbotsford Parks to the extent possible to support construction. The project is committed to work with City of Abbotsford personnel to develop restoration plans that would support Abbotsford's park objectives.	City_of_Abbotsford_IR_No._2.2.04	1 - Prior to Construction	In Progress		
575	Pipeline Engineering	SzTumminus First Nation	Trans Mountain will undertake field studies in 2015 to include a determination of whether faults and lineaments are pre-Holocene.	SzTumminus_FN_IR_No._2(d).18.a	1 - Prior to Construction	Complete		

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576	Pipeline Engineering	City of Abbotsford	Trans Mountain will consult with the BC Inspector of Dikes specific to the Sumas Canal crossing methodology upon completion of the current investigative study. Trans Mountain plans to undertake soil investigations at Sumas Lake Canal as part of Detailed Engineering initiating in 2015 and will share the results of the soil investigations with the City of Abbotsford.	City_of_Abbotsford_IR_1 - Prior to Construction No._2.206	IR 1 - Prior to Construction	Complete		
577	Pipeline Engineering	Upper Nicola Band	Trans Mountain will re-evaluate the need for supplemental LiDAR within Upper Nicola/Syilx territory after supplemental desktop studies and the field reconnaissance portions of the investigation are completed in 2015.	Upper_Nicola_Band_I R_No._2d.1v	IR 1 - Prior to Construction	In Progress		
582	Pipeline Engineering	City of Abbotsford	Trans Mountain is committed to trenchless installation methods across paved road crossings to minimize Project impacts to the city of Abbotsford infrastructure and to the travelling public. Road crossing designs and methodology will be reviewed with the City of Abbotsford and finalized in advance of construction.	City_of_Abbotsford_IR_1 - Prior to Construction No._2.2.10d	IR 1 - Prior to Construction	Superseded by NEB Condition	14, 49	
584	Pipeline Engineering	Upper Nicola Band	Trans Mountain will complete a specific assessment of fault zones proximal to where HDD drilling is scheduled at the Coldwater River 4 site and when geotechnical drilling planned for summer 2015 (upon receiving OCC permits) is conducted.	Upper_Nicola_Band_I R_No._2(c).02.a	IR 1 - Prior to Construction	Scoping		
585	Pipeline Engineering	Upper Nicola Band	Trans Mountain will collect observations of alteration minerals specific to the Coldwater River 4 site when geotechnical drilling is completed at that site in summer 2015.	Upper_Nicola_Band_I R_No._2(c).02.b	IR 1 - Prior to Construction	Complete		
586	Pipeline Engineering	Upper Nicola Band	Trans Mountain will prepare and file with the NEB a summary report of the geotechnical investigation and any reassessment of the horizontal directional drill (HDD) feasibility associated access to the site for Coldwater River 4 crossing.	Upper_Nicola_Band_I R_No._2(c).02. w	IR 1 - Prior to Construction	Superseded by NEB Condition	67	
588	Pipeline Engineering	City of Abbotsford	Trans Mountain confirms its commitment to consult with the City of Abbotsford on valve locations and type of valves at each location.	City_of_Abbotsford_IR_1 - Prior to Construction No._2.4.17a	IR 1 - Prior to Construction	Superseded by NEB Condition	17	
590	Pipeline Engineering	City of Abbotsford	Trans Mountain will commit to evaluate the feasibility of installing an additional valve in the vicinity of KP 1123.	City_of_Abbotsford_IR_4 - Operations No._2.4.17f	IR 4 - Operations	Superseded by NEB Condition	17	
591	Pipeline Engineering	City of Abbotsford	Trans Mountain will commit to perform further assessments to see if outflow volume can be optimized in the vicinity of KP 1117, and further in this location by means of adjusting valve types, numbers or locations. Trans Mountain has revisited the valve configuration in the vicinity of KP 1123, and will commit to evaluate the feasibility of installing an additional valve at this location.	City_of_Abbotsford_IR_4 - Operations No._2.4.17g	IR 4 - Operations	Superseded by NEB Condition	17	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition [x] Number	Additional Comments
592	Pipeline Engineering	City of Abbotsford	Trans Mountain will commit to work with the City of Abbotsford on possible special designs (deeper burial, structural fill) for the pipeline, in select areas for the Auguston development near RK 1117 to 1118 and beyond to McKee Road.	City_of_Abbotsford_IIR_No._2.7.24	1 - Prior to Construction	Superseded by NEB Condition	14,49	
594	Pipeline Engineering	City of Abbotsford	City representatives have informed Trans Mountain that the crossing of Sumas Mountain Road is located on solid rock, and that a trenchless crossing may not be feasible. If that is the case, Trans Mountain will work with the City to finalize the crossing design, methodology, and construction scheduling to minimize impact to the general public.	City_of_Abbotsford_IIR_No._2.2.10d	1 - Prior to Construction	Superseded by NEB Condition	14,49	
604	Pipeline Engineering	Upper Nicola Band	Trans Mountain will ensure that all locations where horizontal directional drilling (HDDs) are planned, detailed field investigations will be carried out to ensure the HDD is located appropriately.	Upper_Nicola_Band_I_R_No._2(c).03.a	1 - Prior to Construction	Complete		
605	Pipeline Engineering	Upper Nicola Band	Trans Mountain will share the final approved Work Plan Procedure and Schedule (WPPS) and detailed Drilling Fluids Management Plans (DFMPs) with Upper Nicola, and these plans will be made available no later than one month before prior to construction of the crossing.	Upper_Nicola_Band_I_R_No._2(c).02(z)	1 - Prior to Construction	Scoping		
607	Pipeline Engineering	NEB	Trans Mountain will undertake a reassessment of potential outflow volumes using the increased average throughput volumes expected on Line 1 post expansion.	NEB_IIR_No._4_17b.2	4 - Operations	Superseded by NEB Condition	18	
614	Pipeline Engineering	NEB	KMC commits to completing a pre-reactivation inspection using the electromagnetic acoustic transducer tool (EMAT) tool.	NEB_IIR_No._4.42a	3 - Prior to Operations	Scoping		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
615	Pipeline Engineering	NEB	Prior to reactivation, Trans Mountain will complete the following activities to verify that the pipeline is safe to return to service: <ul style="list-style-type: none"> <li>• Complete crack inspections of the pipeline system using the Axial Flow Detection (AFD) and Electro-Magnetic Acoustical Transducer (EMAT) refer to the response to NEB IR No. 4.42a) prior to the reactivation of the pipeline.</li> <li>• Complete high resolution metal loss inspections of the pipeline system prior to reactivation.</li> <li>• Complete high resolution geometry inspection of the pipeline system prior to reactivation.</li> <li>• Complete a hydrostatic test to revalidate the currently licensed maximum operating pressure (MOP) of the pipeline segments prior to reactivation.</li> <li>• Complete a ultrasonic crack detection (USCD) or EMAT inspection within 2 years of reactivation.</li> <li>• Complete ongoing crack management programs with includes:               <ul style="list-style-type: none"> <li>- pressure cycle monitoring programs</li> <li>- fatigue growth assessments to validate in-line inspection intervals</li> <li>- in-line inspections to look for stress corrosion cracking (SCC), long Seam, pipe body, and co-commitment tracking (i.e. metal loss with cracking, dents with cracking).</li> </ul> </li> </ul>	NEB_IR_No._4.43c	3 - Prior to Operations	Scoping		
621	Pipeline Engineering	City of Burnaby	Trans Mountain will provide plans which indicate all utilities for the selected pipe route once the protocol agreements with the municipalities are set and the utility owners have been able to provide more detailed utility information.	City_Burnaby_IR_No._2.090a	1 - Prior to Construction	Scoping		
625	Pipeline Engineering	NFR	Trans Mountain will commit to provide an updated engineering assessment (including fatigue assessments and future inline inspection (ILI) schedules) upon completion of the baseline work and prior to the pipeline segments being placed in Line 2 service in 2018.	NEB_IR_No._4.44	3 - Prior to Operations	Scoping		
627	Pipeline Engineering	City of Burnaby	Trans Mountain commits to complying with the City of Burnaby's mapping request should spatial data be provided to Trans Mountain from the City of Burnaby.	City_Burnaby_IR_No._2.108	6 - Project Lifecycle	In Progress		
628	Pipeline Engineering	City of Burnaby	Trans Mountain commits to using continuous heavy wall pipe for the delivery pipelines in excess of the minimum requirements of CSA Z662-11.	City_Burnaby_IR_No._2.112	1 - Prior to Construction	Complete		

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Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition Number	Additional Comments
629	Pipeline Engineering	NEB	The risk-based approach allows geohazards to be prioritized, managed, and mitigated in the absence of mandatory design guidelines or standards. However, where such guidelines or standards are available, Trans Mountain will adopt the more conservative of the results of the risk-based approach and those guidelines or standards.	NEB IR No. 4_51b	1 - Prior to Construction	Scoping		
631	Pipeline Engineering	NEB	Trans Mountain will meet or exceed both the minimum cover requirement specified by CSA Z662 and apply the Province of British Columbia's more conservative one in two hundred year designated flood mandate for all river crossings.	NEB IR No. 4_51b	2 - During Construction	Complete		
632	Pipeline Engineering	NEB	During detailed design Trans Mountain will carry out stress and strain based seismic assessments of the pipeline at critical locations including the Burnaby Mountain crossing.	NEB IR No. 4_53	1 - Prior to Construction	Scoping		
634	Pipeline Engineering	City of Burnaby	Trans Mountain will communicate with TiCorp during the detailed design phase to minimize the disturbance to existing compensation areas within the TMEP Proposed Project footprint. Any disturbance to existing riparian vegetation or compensation areas will be re-established by Trans Mountain during the construction and reclamation phases of the Project.	City_Burnaby_IR_No_...2-135	1 - Prior to Construction	In Progress		
637	Pipeline Engineering	NEB	Trans Mountain will implement the type of engineered solution it has demonstrated in NEB IR No. 3.3a (Filing ID A4h1V2) to mitigate the induced voltages resulting from power line steady state and transient conditions once it completes the (GPR) study at the end of 2015.	NEB IR No. 4_56a	1 - Prior to Construction	Superseded by NEB Condition	50	
644	Pipeline Engineering	NEB	As part of condition compliance, Trans Mountain will provide the NEB with the results of Electrical Interference Analysis for pipeline segments that are less than 10m from BC Hydro power lines and the list of Pipeline Segments where mitigations in response to NEB IR No. 4.56a have been applied.	NEB IR No. 4_56b	1 - Prior to Construction	Scoping		
645	Pipeline Engineering	The City of Edmonton	Trans Mountain will, to the extent practicable, plan the construction to minimize interference with construction activities associated with the expansion of Whitemud Drive.	City_of_Edmonton_IR ...No_2.2.1d	1 - Prior to Construction	Superseded by NEB Condition	14,49	
650	Pipeline Engineering	City of Kamloops	Trans Mountain is committed to discussing the proposed road crossing methodologies with the City of Kamloops for incorporation of feedback into Detailed Engineering and Design.	City_of_Kamloops_IR ...No_2.01a	1 - Prior to Construction	Superseded by NEB Condition	14,49	
685	Pipeline Engineering	Metis Nation of Alberta Gunn Metis Local 55	A hydrostatic test profile will be developed for each test section as part of the final hydrostatic test plan.	Gunn_Metis_Local_55 ...IR_No_2.01	2 - During Construction	Superseded by NEB Condition	112,113	

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701	Pipeline Engineering	City of Surrey	Trans Mountain is committed to discussing the proposed crossing designs with the City of Surrey for incorporation of feedback into Detailed Engineering and Design.	City_Surrey_IR_No._2.1.2.a	1 - Prior to Construction	In Progress		
704	Pipeline Engineering	Dorothy Doherty	Trans Mountain's Burnaby Mountain tunnel design will incorporate design features and operating procedures that recognize the unique nature of the installation and the lack of accessibility for future maintenance and repair of the sections of the Westridge delivery lines that are encased in concrete within the tunnel.	Doherty_D_IR_No._3_103g	1 - Prior to Construction	Scoping		
711	Pipeline Engineering	Township of Langley	Trans Mountain will provide the Township of Langley with "issued for construction centre line" GIS shape files as soon as they are available and with sufficient time for the Township to conduct emergency management planning.	Langley_IR_No._2.09.a1	1 - Prior to Construction	Superseded by NEB Condition	14,49	
713	Pipeline Engineering	Township of Langley	Once pipeline installation is complete, Trans Mountain commits to providing the Township of Langley with "surveyed as-built centre line" shape files.	Langley_IR_No._2.09.a1	1 - Prior to Construction	Superseded by NEB Condition	14,49	
721	Pipeline Engineering	Township of Langley	Trans Mountain intends to consult with the Township of Langley regarding the Township's design criteria, and construction requirements and specifications as part of the company's efforts to minimize construction damage.	Langley_IR_No._2.16.a1	1 - Prior to Construction	Superseded by NEB Condition	14,49	
739	Pipeline Engineering	Edward Farquhar	Trans Mountain will ensure that a review of shut-down procedures, including the rationale for selecting a 10-minute rule or another rule as may be appropriate, is part of the consultation program to be undertaken with the Province of BC.	Farquhar_T_IR_No._2.2.4a	1 - Prior to Construction	Scoping		
740	Pipeline Engineering	Edward Farquhar	Trans Mountain will perform the API 1149 calculations during the detailed engineering and design phase, likely in late 2016, assuming the current overall project schedule is maintained.	Farquhar_T_IR_No._2.2.8a	1 - Prior to Construction	Scoping		
761	Pipeline Engineering	Province of British Columbia	Trans Mountain will develop a management plan for terrain stability to be implemented during construction and to continue through operation once construction is completed.	Province_BC_IR_No._2.02c	6 - Project lifecycle	Superseded by NEB Condition		
762	Pipeline Engineering	Province of British Columbia	Trans Mountain will carry out Terrain Stability Assessment (TSA) for selected Class III polygons where desktop study suggests that TSAs are warranted.	Province_BC_IR_No._2.02d	1 - Prior to Construction	Superseded by NEB Condition	66	
764	Pipeline Engineering	Province of British Columbia	Trans Mountain will assign consequence scores to all but low vulnerability aquifers that are commensurate with aquifer High Consequence Areas (HCAs).	Province_BC_IR_No._2.08a	2 - Prior to Construction	Scoping		
766	Pipeline Engineering	Province of British Columbia	Trans Mountain will work with communities that have specific concerns related to protection of municipal water sources and will consider installation of monitoring wells in strategic locations.	Province_BC_IR_No._2.12	4 - Operations	Scoping		

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Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
785	Pipeline Engineering	Province of British Columbia	Trans Mountain commits to implement a Risk-Based Design for TMEP. This will include urban areas, agricultural lands, High Consequence Areas (HCAs) that include high Environmental sensitivities, and for seismically prone areas where slope instability may be an issue.	Province_BC_IR_No_2 .13c	2 - Prior to Construction	Superseded by NEB Condition	15	
786	Pipeline Engineering	Province of British Columbia	Trans Mountain commits to use heavy wall pipe at all major and most minor watercourse crossings, road crossings, and pipeline facilities when not required by CSA Z662 for LVP pipelines.	Province_BC_IR_No_2 .13c	1 - Prior to Construction	Complete		
787	Pipeline Engineering	Province of British Columbia	Trans Mountain commits to use Cat II pipe over and above industry standards, for all belowground Line 2 (TMEP) piping, and to develop equivalent and compatible welding procedures with proven notch toughness, even though Cat II pipe and proven notch toughness is not required for LVP pipelines.	Province_BC_IR_No_2 .13c	2 - Prior to Construction	Superseded by NEB Condition	111	
788	Pipeline Engineering	Province of British Columbia	Trans Mountain commits to use Strain-Based Design and Engineering Critical Assessment (ECA) for large soil displacement loadings and muskeg areas when required.	Province_BC_IR_No_2 .13c	2 - During Construction	Superseded by NEB Condition	70	
789	Pipeline Engineering	Province of British Columbia	Trans Mountain is committed to using a two (2) stage screening and review process to determine the most suitable crossing methodology for each watercourse based upon fish and fish habitat sensitivity, engineering, constructability, environmental and a number of other significant factors.	Province_BC_IR_No_2 .13c	1 - Prior to Construction	Complete		
790	Pipeline Engineering	Province of British Columbia	A commitment to update and implement Trans Mountain Natural Hazard Management Program for Geohazard along the Line 2 (TMEP) pipeline.	Province_BC_IR_No_2 .13c	2 - During Construction	Superseded by NEB Condition	15, 51, 65, 66, 68, 69	
791	Pipeline Engineering	Province of British Columbia	Trans Mountain commits to inspect 100% of all production welds when not required by CSA Z662 (Clause 7.10.3.1) for LVP pipelines.	Province_BC_IR_No_2 .13c	2 - During Construction	Superseded by NEB Condition	111	
793	Pipeline Engineering	Upper Nicola Band	Trans Mountain has committed to complete in-line inspections prior to and following the return to service of the pipeline segments as well as conducting a hydrostatic test of the deactivated sections (Darfield to Black Pines).	Upper_Nicola_Band_I R_No._2.08d	3 - Prior to Operations	Superseded by NEB Condition	19	
797	Pipeline Engineering	Upper Nicola Band	Trans Mountain has committed to conduct in-line inspection and repair programs and will subject the pipeline to pressure test in accordance with CSA Z662-11. These activities will ensure that the pipeline has a minimum safety factor of 1.25 relative to the licensed maximum operating pressure (NOP).	Upper_Nicola_Band_I R_No._2.09j	2 - During Construction	Superseded by NEB Condition	112, 113	
799	Pipeline Engineering	Upper Nicola Band	As part of 2015 geotechnical work, additional field investigations will be undertaken to refine the assessment of all geohazards identified in the report.	Upper_Nicola_Band_I R_No._2.10e	1 - Prior to Construction	Superseded by NEB Condition	15, 51, 65, 66, 68, 69	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (K) Number	Additional Comments
802	Pipeline Engineering	Upper Nicola Band	An ARD Mitigation Toolbox will be developed for use during construction. The ARD Mitigation Toolbox will summarize construction management practices and ARD/NL mitigation methods for pipeline construction.	Upper_Nicola_Band_I_R_No_2.15e	1 - Prior to Construction	Superseded by NEB Condition	51,72	
805	Pipeline Engineering	Upper Nicola Band	Trans Mountain commits to working with Upper Nicola Band on further sampling for ARD characterization and delineation to be completed as part of the 2015 ARD work plan.	Upper_Nicola_Band_I_R_No_2.21	1 - Prior to Construction	Superseded by NEB Condition	72	
810	Pipeline Engineering	Upper Nicola Band	Trans Mountain will review the findings including location and severity of Geohazard assessed with a FLOC value greater than 10.5 located in Upper Nicola Sylix Territory. Trans Mountain will re-assess the FLOC values based on the site specific field assessments and submit in a report prior to construction.	Upper_Nicola_Band_I_R_No_2.84 (pages 317 and 325)	1 - Prior to Construction	Superseded by NEB Condition	69	
840	Pipeline Engineering	Andrew Weaver	Trans Mountain will file the Lower Mainland and Fraser Valley fault study in Q1 2015 as part of its previous commitment to file a seismic assessment for the pipeline corridor by March 31, 2015.	Weaver_A_IR_No_2.21	1 - Prior to Construction	Superseded by NEB Condition	69	
847	Pipeline Engineering	Strata NW 313	Trans Mountain is committed to working with BC Hydro to find mutually agreeable engineering solutions in order to safely route the pipeline within the 30 m zone.	Strata_NW313_IR_No_2.04c	1 - Prior to Construction	Complete		
862	Pipeline Engineering	Squamish Nation	Site specific subsurface investigations for "high" and "moderate" liquefaction potential sites along the corridor will be performed in a phased approach on select sites starting spring/summer 2015, and will be based on findings from the investigation of the "very high" liquefaction potential sites and the potential for impact to the pipeline.	Squamish_Nation_IR_No_2.12.c	1 - Prior to Construction	Superseded by NEB Condition	68	
866	Pipeline Engineering	Matsqui First Nation	Trans Mountain is committed to transparency and will provide the results of the risk assessment to Matsqui First Nation upon completion of the detailed design.	Matsqui_FN_IR_No_2.09.b	1 - Prior to Construction	Superseded by NEB Condition	15	
1,092	Pipeline Engineering	Environment Canada	Trans Mountains plans to have a qualified engineer and/or hydrogeologist onsite during construction to sample and analyze the water being extracted during the tunneling process.	GOC_EG_IR_No_2.12b	2 - During Construction	Scoping		
1,109	Pipeline Engineering	Township of Langley	Trans Mountain will commit to reinstating pavement cuts to the Township's specification.	Langley_IR_No_2.19.a	2 - During Construction	Scoping		
1,626	Pipeline Engineering	Sto:lo Collective	Trans Mountain will provide updated maps to Sto:lo representatives to illustrate existing and new accesses required to support pipeline construction.	Sto:lo Collective Recommendation #31	1 - Prior to Construction	Complete		

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2,013	Pipeline Engineering	BC Parks	Open cut crossings are typically only utilized when a watercourse is dry or frozen to the bottom at the time of construction. Under these conditions, sediment release is not expected to occur; however, in the event the recommended isolated crossing technique is not feasible at Finn Creek, an open cut or partial isolation technique may be required. Trans Mountain will conduct monitoring under flowing conditions to document downstream turbidity and any exceedances of the relevant guidelines will be reported to the appropriate regulatory authorities.	BC Parks boundary adjustment application (August 2014) Tab A - Finn Creek Provincial Park	2 - During Construction	In Progress		
2,034	Pipeline Engineering	BC Parks	Vehicle and pipeline crossing methods have been selected to reduce Project specific effects in consideration of presence and use by fish species of concern in Finn Creek. Trans Mountain will conduct the crossing using an isolated crossing method (i.e., if water is present) or open cut crossing (i.e., if dry or frozen to bottom). Although not stated in the original application, the use of a diversions channel is being considered to successfully isolate the section of channel at the crossing location. If used during a period of low flow (e.g., fall), a diversion would allow fall spawning species, such as bull trout, to continue a migration upstream to spawning habitat, unaffected by instream construction.	BC Parks boundary adjustment application (August 2014) Tab A - Finn Creek Provincial Park	2 - During Construction	In Progress		
2,155	Pipeline Engineering	Shxw'owhámel First Nation	Trans Mountain has proposed a pipeline re-alignment from Alternative Kilometer Post (AK) 1057 to AK 1059, designed to avoid the pit houses and archaeological sites identified by Shxw'owhámel First Nation.	Public Land Reply Evidence	1 - Prior to Construction	Complete		
2,174	Pipeline Engineering	NEB	Trans Mountain will install permanent mitigation measures on any portion of the pipeline that will be buried for longer than four months prior to completion of the project.	NEB IR No._2.075c	2 - During Construction	Superseded by NEB Condition	50	
2,236	Pipeline Engineering	C.G.L.A.P. - Collaborative Group of Landowners Affected by Pipelines	Where deep tillage and sub-soiling is practised, Trans Mountain will install the pipeline at deeper depth of cover than the standard 0.9 m. Based on information gathered to date, tillage and sub-soiling may be as deep as 0.7 m from existing grade. In these situations, Trans Mountain would propose that the pipeline would need a depth of cover of minimum 1.2 m measured from existing grade.	CG_LAP_IR_No._1.9d	2 - During Construction	Complete		
2,352	Pipeline Engineering	Metro Vancouver	As part of the detailed design process, Trans Mountain will design watercourse crossings for scour and bank stability to meet the conditions of a 1 in 200 year flood event. The mitigation will be selected on a case by case basis but will include either burying the pipe sufficiently deep or to provide other protection such as bank stabilization.	Reply Evidence 10.22 Watercourses p10-1 line 19	1 - Prior to Construction	Complete		

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2,360	Pipeline Engineering	Upper Nicola Band	In response to metal leaching from the pipeline itself, Trans Mountain will apply protection to the pipeline from corrosion and metal deterioration by the application of a fusion bond epoxy (FBE) coating system on the outer surface of the pipeline to act as a barrier to the environment.	Reply Evidence 11.3 Metal Leaching and Acid Rock Drainage - p6 - line 18	2 - During Construction	Complete		
2,368	Pipeline Engineering	Yarrow Ecovillage	Trans Mountain confirms that the pipeline will remain within the existing right of way and the centre line of the proposed pipeline will be 6m offset from the existing pipeline, on the southern side.	Reply Evidence 13.4 Yarrow Ecovillage, Chilliwack - p2 - line 11	2 - During Construction	Scoping		
2,376	Pipeline Engineering	NEB	As part of the detailed design process, Trans Mountain will design watercourse crossings for scour and bank stability to meet the conditions of a 1 in 200 year flood event. The mitigation will be selected on a case by case basis but will include either burying the pipe sufficiently deep or to provide other protection such as bank stabilization.	Reply Evidence 10.2.2 Watercourses - p10.1 - line 19	1 - Prior to Construction	Complete		
2,384	Pipeline Engineering	NEB	Trans Mountain will ensure the TMEP pipeline, including line pipe and heavy wall pipe (but excluding facilities pipe), will be made of low carbon, high strength, low alloy, Grade 433 steel. The nominal pipe size (NPS) 42, 36, 30 pipe will be manufactured in accordance with CSA Z245.1 Steel Pipe and KMC Standard MP2120 Main Line Pipe Material. Trans Mountain will ensure all mainline pipe will be manufactured using standard manufacturing procedures for longitudinal and/or helical seam (spiral) submerged arc welded pipe with controlled rolling practices utilized to improve strength, ductility, weldability, and toughness properties of the pipe.	Reply Evidence 15.4 Seismic Hazard Mitigation - p11 - line 30	1 - Prior to Construction	Complete		
2,385	Pipeline Engineering	Metro Vancouver	In addition to working closely with Metro Vancouver through a Technical Working Group (TWG) to mitigate potential conflicts, Trans Mountain will facilitate the necessary coordination between its contractor and Metro Vancouver's contractor(s) to prevent interference with work space requirements, construction methods and working areas.	Reply Evidence 16.1.3 Construction Schedule Conflicts - p1 - line 29	1 - Prior to Construction	Scoping		
2,466	Pipeline Engineering	NEB	Trans Mountain's eventual Project footprint will avoid the mature forest community in the Brunette River Conservation Area ; as recommended by BC ecologists, Tom Braundahl.	Reply Evidence 37.1.2 Vegetation p37-2 - line 13	1 - Prior to Construction	Scoping		
2,503	Pipeline Engineering	City of Burnaby	Trans Mountain will install monitoring (slope inclinometers and piezometers) as part of the geotechnical drilling investigation for the trenchless construction alternative through Burnaby Mountain.	Cty_Burnaby_IR_No_1-33.1j	1 - Prior to Construction	In Progress		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition # Number	Additional Comments
2,556	Pipeline Engineering	Township of Langley; Fraser Valley Regional District; City of Abbotsford	Trans Mountain has committed to changing the alignment of the pipeline from the west side of Redwoods Golf Course to the east side.	This commitment was made since the close of intervenor's evidence. Attachment to Email from Suzy Hunter, Hatch Mott Macdonald re: TMEP Technical Working Group meeting sent to R. Zwagg, Township of Langley, dated September 30, 2015.	1 - Prior to Construction	Complete		
2,565	Pipeline Engineering	NEB	Trans Mountain will commit to apply minimum clearance of 0.7 m in urban areas, where practical, and a precast slab will be installed between the new TMEP pipeline and the adjacent facility. A Typical Foreign Pipeline Crossing drawing is included in Appendix C.	Application Volume 4A s. 3.2.18 pA-26; Application Volume 4A Appendix C	1 - Prior to Construction	In Progress		
2,581	Pipeline Engineering	City of Burnaby	If the Barnet Escarpment Trail is south of the Westridge Terminal and north of the Kask Brothers site, the proposed revised pipeline corridor will likely undercross it in trenchless mode. Trans Mountain will work with the City of Burnaby to reduce impacts, where practical.	City_Burnaby_IR_No_1.44.010	2 - During Construction	Complete		
2,632	Pipeline Engineering	NEB	Trans Mountain will avoid disturbance of known gathering places during right-of-way finalization, to the greatest extent practical.	Application Volume 5B Table 7.2.2-4 p7-27	1 - Prior to Construction	Scoping		
2,644	Pipeline Engineering	NEB	Trans Mountain will ensure that roads that deteriorate during Project construction as a result of Project traffic will be maintained by the contractor subject to approval of the road owner, on the basis of a pre and post-construction condition assessment.	Application Volume 5B Table 7.2.5-2 p7-122	2 - During Construction	Scoping		
2,645	Pipeline Engineering	NEB	Trans Mountain will ensure rail lines will be crossed using a trenchless crossing method (e.g., bore or horizontal directional drilling (HDD)).	Application Volume 5B Table 7.2.5-2 p7-122	2 - During Construction	Complete		
2,819	Pipeline Engineering	City of Burnaby	Working with the City of Burnaby, Trans Mountain would be willing to collaboratively develop an approach to construction that minimized potential impacts on the Barnet Escarpment Urban Trail prior to construction. Possible mitigation measures could include pre-building sections of the trail in advance of closing existing sections required for construction. This approach would minimize or eliminate impacts to trail users.	City of Burnaby... No. 2,100	1 - Prior to Construction	Scoping		

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Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
2.822	Pipeline Engineering	City of Burnaby	Trans Mountain commits to using continuous heavy wall pipe for the delivery pipelines in excess of the minimum requirements of CSA 262-11.	City of Burnaby, No. 2.112	1 - Prior to Construction	Complete		
2.858	Pipeline Engineering	City of Abbotsford	Trans Mountain is committed to use trenchless method at Mt. Lehman Rd. and through the parking lot of the City's Mt. Lehman Firehall. i) If geotechnical conditions preclude use of trenchless method, Trans Mountain will use construction methods that maintain access to the firehall 24 hours per day for the City's emergency services. Trans Mountain is committed to consult with the City of Abbotsford and its emergency services as it develops its construction plans in this area.	City_Abbotsford_IR_No_1.21b	1 - Prior to Construction	Scoping		
2.892	Pipeline Engineering	City of Surrey	Trans Mountain will ensure alignment of pipeline to avoid City of Surrey parkland at RK 1158.5.	City_Surrey_IR_No_1.1f	1 - Prior to Construction	Complete		
2.912	Pipeline Engineering	Dorothy Doherty	Trans Mountain will use pipe and pipe coating materials for the Trans Mountain Line 2 design that exceed the minimum requirements of Canadian Standards Association (CSA) Standards and will exceed or be equivalent to the current pipeline industry practice.	Doherty_D_IR_No_1.02B	2 - During Construction	Complete		
2.929	Pipeline Engineering	Environment Canada	In the Brunette River Conservation Area, Trans Mountain commits that the trenchless installation technique will be used to cross from the Sapperton Rail.	GoC_IR_No_2.025.a	2 - During Construction	Scoping		
2.939	Pipeline Engineering	Natural Resources Canada	Trans Mountain will commit to implementing weld toughness testing of electric welded pipe at the minus 5 degrees Celsius (-5°C) temperature.	GoC_NRCan_IR_No_1.10.02	1 - Prior to Construction	Complete		
2.962	Pipeline Engineering	Government of Canada	Trans Mountain commits that the employees employed during the summer and fall 2014 survey will be invited to work during the 2015 survey season by the [land survey] contractor.	GoC_IR_No_2.05.3	1 - Prior to Construction	Complete		
3.528	Pipeline Engineering	Upper Nicola Band	An Acid Rock Drainage (ARD) management plan will be developed as part of detailed engineering and design. Trans Mountain will conduct inspections and post-construction seepage sampling at areas where potentially acid generating material has been identified or exposed during construction.	Upper_Nicola_Band_I_R_No_1.03I	1 - Prior to Construction	In Progress		
3.533	Pipeline Engineering	Township of Langley	Trans Mountain will commit to reinstating pavement cuts to the Township's Langley, IR No_2.19.a	2 - During Construction	Scoping			
3.542	Pipeline Engineering	C.G.I.A.P. - Collaborative Group of Landowners Affected by Pipelines	In areas where pipeline depth needs additional cover to accommodate deep fillage the pipeline will be buried with soil cover over the pipe of 1.2m.	CGIAO_IR_No_1.5c	1 - Prior to Construction	Complete		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
3,554	Pipeline Engineering	BC Parks; NEB	All provincial parks, protected areas and recreation areas will be traversed with 11.8 mm wall thickness pipe. All major watercourse crossings in parks and protected areas will be constructed using heavy wall pipe. The McQueen Creek crossing will be 14.7mm wall thickness pipe. The Clearwater River will be 19.0 mm extra heavy wall thickness pipe, as the pipeline is proposed to be installed by a horizontal directional drilling (HDD) method. The extra heavy wall thickness is required for large loads imposed during installation and during the pipe pull and finished pipeline profile in the bored hole. If the Clearwater River HDD proves to be unsatisfactory then the contingency in-stream design would be implemented with a wall thickness of 14.7 mm or the 19.0 mm thick pipe planned for the HDD if the pipe had already been welded into a pipe string in preparation for pipe pulling.	BC Parks boundary adjustment application (August 2014)	1 - Prior to Construction	In Progress		
3,559	Pipeline Engineering	Burnaby Residents Opposing Kinder Morgan Expansion - BROKE	If a specific fault poses an unacceptable risk to the project, Trans Mountain will develop a fault-specific crossing design to mitigate risk to an acceptable level.	BROKE_IR_No...2.1e	1 - Prior to Construction	In Progress		
3,562	Pipeline Engineering	British Columbia Hydro and Power Authority	Trans Mountain commits to working with BC Hydro to establish safe separation distances from the various power line circuits involved in the TMP.	BC_Hydro_IR_No._1.1.1 - Prior to Construction 1.3		Complete		
3,652	Pipeline Engineering	The City of Edmonton	TMEP will use minimum 14.7 mm wall thickness pipe through Whitemud Drive area. HDD will be minimum 19.0 mm WT.	Non-Regulatory Commitment	1 - Prior to Construction	Complete		
3,662	Pipeline Engineering	Meritt Airport Authorities	TMEP pipeline design will need to accommodate the proposed runway expansion.	Non-Regulatory Commitment	1 - Prior to Construction	Complete		
3,668	Pipeline Engineering	City of Abbotsford	TMEP commits to bore under Clayburn Rd during construction and that any potential road closures will be minimal in duration for Clayburn Road.	Non-Regulatory Commitment	1 - Prior to Construction	Complete		
3,669	Pipeline Engineering	City of Chilliwack	TMEP will commit to install heavy wall pipe (14.7 mm wall thickness versus 11.8 mm) for the entire portion between Silverthorne Road to Watson Road. TMEP will also add a valve in the nearest logical proximity with power and communications, at or before the eastern start of Silverthorne Road.	Non-Regulatory Commitment	1 - Prior to Construction	Complete		
3,671	Pipeline Engineering	Oppenheimer Foods	TMEP commits to crossing the loading bays using a trenchless bore.	Non-Regulatory Commitment	1 - Prior to Construction	Complete		
3,673	Pipeline Engineering	City of Surrey; Edmonton & Area Land Trust	Trans Mountain will engineer to account for future road projects.	Non-Regulatory Commitment	1 - Prior to Construction	Superseded by NEB Condition 14,49		
3,688	Pipeline Engineering	City of Abbotsford	Trans Mountain will review applicability of the contingency fund requirement for excavation below elevation 200 for quarry businesses.	Non-Regulatory Commitment	1 - Prior to Construction	Scoping		

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
3,716	Pipeline Engineering	City of Merritt	Trans Mountain will construct TMEP to accommodate future runway extension at Merritt Airport.	Non-Regulatory Commitment	1. Prior to Construction	Complete		
3,727	Pipeline Engineering	Sandy Hill Neighbourhood Information Session Attendee	Trans Mountain will bore roadway of private residences to enable property access during construction.	Non-Regulatory Commitment	2. During Construction	Complete		
3,731	Pipeline Engineering	Sandy Hill Neighbourhood Information Session Attendee	Trans Mountain will use trenchless technology for construction on/near Clayburn Road as it is a major thoroughfare for commuters.	Non-Regulatory Commitment	1. Prior to Construction	Complete		
258	Regulatory	Adams Lake Indian Band	A minimum of two Environmental compliance audits per year for each individual prime contractor (mainline construction) or construction spread will be conducted by a qualified, third-party consultant.	ALIB_IR_No_1.6.07	2. During Construction	Superseded by Management Plan		
307	Regulatory	Adams Lake Indian Band; City of Burnaby	An Environmental Compliance Plan (ECP) will be prepared prior to the start of construction (Section 5.3 of Volume 6a).	ALIB_IR_No_1.6.01a, City_Burnaby_IR_No_1.26.01a, City_Burnaby_IR_No_1.26.01b	1. Prior to Construction	Superseded by Management Plan		
346	Regulatory	NEB	Environmental compliance audits will be commissioned by the KMC Legal Department and will be administered by KMC's Environment, Health and Safety Department. A number of internal compliance audits are expected over the life of the Project.	Application Volume 6A, 3-6.	2 - During Construction	Superseded by Management Plan		
15	Security	Angelika Hackett; Chris Amy	Prior to construction, Trans Mountain will develop a Security Management Program (SMP). Ninety days before construction, a construction SMP will be filed with the National Energy Board (NEB) as per NEB draft Condition 37. Prior to completion of construction and before commencing operations of the new pipeline, an updated operations SMP will be submitted to the NEB.	Amy_C_IR_No_1.8a, Hackett_A_IR_No_1.7a	1. Prior to Construction	Superseded by NEB Condition	63	
454	Security	NEB	All construction areas, including those within existing Trans Mountain rights-of-way, pump stations, terminals, and other facilities will undergo a Security Risk Assessment (SRA) and appropriate controls will be implemented prior to the start of construction.	Application Volume 4B, 4B-56.	6 - Project Lifecycle	Superseded by NEB Condition	63	

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
1,638	Security	Sto:lo Collective	Trans Mountain will have security in place to reduce the risk of vandalism in and around work sites. Trans Mountain welcomes the opportunity to learn about Sto:lo member security companies with this capacity. It is currently planned that the contractors selected to complete the work will be hiring or otherwise providing subcontractors to secure the work-site during and after hours, including office complexes, equipment, etc.	Sto:lo Collective Recommendation #56	1 - Prior to Construction	Scoping		
3,623	Security	City of Kamloops; City of Merritt; District of Clearwater; RCMP	Trans Mountain will confirm if any additional RCMP resources required for construction will be paid for by KMC.	Non-regulatory Commitment	1 - Prior to Construction	Superseded by NEB Condition	63	
3,630	Security	Workshop Participants	Trans Mountain will consider the request for a security liaison for each policing contact per community during construction and providing ongoing security intelligence information.	Non-Regulatory Commitment	6 - Project Lifecycle	Superseded by NEB Condition	63	
13	Stakeholder Engagement	Regional District of Fraser-Fort George	Trans Mountain is committed to community benefits for municipalities and regions crossed by the Project and Trans Mountain has initiated discussions with local governments and organizations to explore opportunities related to its priority areas of community investment, the environment, and education. For Valemount, as with all pipeline communities, TMP is committed to providing local business and employment opportunities within the community and region.	RD_of_Fraser-Fort_George_IR_No_1_03e	6 - Project Lifecycle	Superseded by NEB Condition	12,107,145	
20	Stakeholder Engagement	City of Abbotsford	Trans Mountain commits to consult with the City of Abbotsford in the development of the Project construction schedule within City boundaries.	City_of_Abbotsford_IR_1_Prior_to_Construction_No_1_27a	In Progress			
33	Stakeholder Engagement	City of Burnaby	Trans Mountain commits to consult with the City of Burnaby in the development of the Project construction schedule within City boundaries.	City_Burnaby_IR_No_1_02_04b_City_Burnaby_IR_No_...	Prior to Construction	Scoping		
74	Stakeholder Engagement	NEB	Trans Mountain will develop a communication plan to facilitate a concise two-way information exchange between Project members, corporate head office departments, contractors and regulatory authorities in order to effectively manage the Project. The communication will also summarize the notifications required to regulatory authorities and the public.	Application Volume 6A_3-8,	6 - Project Lifecycle	In Progress		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of commitment	Commitment Status	Superseded by NEB Condition [X] Number	Additional Comments
80	Stakeholder Engagement	NEB	Kinder Morgan Canada Inc. (KMC) will provide company contact information to those potentially affected by noise in the event there are noise concerns related to operation of the pipeline system, including: <ul style="list-style-type: none"><li>• land users</li><li>• Aboriginal groups,</li></ul> Company contact information will also be provided to those potentially affected by noise from pipeline construction including: <ul style="list-style-type: none"><li>• residents</li><li>• land users</li><li>• Aboriginal groups.</li></ul>	NEB_IR_No._1.19b	2 - During Construction	Superseded by NEB Condition	73, 74, 80, 86, 141	
95	Stakeholder Engagement	NEB	Trans Mountain will provide contact information to residents, land users and Aboriginal groups that may be affected by air emissions from the tunnel construction such that they can effectively communicate any concerns.	NEB_IR_No._4.03b	1 - Prior to Construction	Superseded by NEB Condition	85	
115	Stakeholder Engagement	Canadian Parks and Wilderness Society - BC Chapter	A full report of all workshop feedback will be included in Consultation Update No. 2 which will be provided to the NEB in Q3 2014.	CPAWS_IR_No._1.2.3. 3	1 - Prior to Construction	Complete		Consultation Update No. 2 (January 1 to April 30, 2014) included the details of BC Parks engagement during that reporting period (as referenced in Section 1.5.3 of the Update). Consultation Update No. 3 (May 1 to December 31, 2014) included additional details of BC Parks engagement during that reporting period (as referenced in Section 1.1.1 of the Update).
116	Stakeholder Engagement	City of Abbotsford	The Project construction communication and notification program will be developed in consultation with the City of Abbotsford and its constituents.	City_of_Abbotsford_IR_No._1.26a	1 - Prior to Construction	In Progress		
117	Stakeholder Engagement	City of Burnaby	Prior to construction, Trans Mountain will undertake a communications and notification program to ensure local businesses and members of the public are made aware of potential construction impacts.	City_Burnaby_IR_No._1.33.27d	1 - Prior to Construction	In Progress		
119	Stakeholder Engagement	City of Burnaby	Trans Mountain will develop a Communications and Notification Program identifying geographic communication areas, in consultation with local governments.	City_Burnaby_IR_No._02.04a	6 - Project Lifecycle	In Progress		
120	Stakeholder Engagement	City of Burnaby	Trans Mountain's engagement is ongoing. In particular Trans Mountain will continue to meet with stakeholders who will be impacted by the Trans Mountain Expansion Project to understand and mitigate their concerns where possible. Trans Mountain remains committed to ongoing dialogue and mitigation of issues with its neighbours as the proposed Project proceeds.	City_Burnaby_IR_No._1.31.01d	6 - Project Lifecycle	In Progress		

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (k) Number	Additional Comments
121	Stakeholder Engagement	City of Port Moody	Trans Mountain will continue to engage with the City of Port Moody, including continuing to share updated project information and addressing concerns about the proposed Trans Mountain expansion Project as they arise.	City of Port Moody_R_No._1.2.1c	16 - Project Lifecycle	In Progress		
124	Stakeholder Engagement	NEB	As part of a commitment to keep stakeholders informed of project activities, Trans Mountain has continued to provide project updates, maintain an active website, phone line and email address. Trans Mountain will continue to seek opportunities to build awareness of the digital engagement platform throughout the project's development.	Pre-Application Project Description, pp 58, 59.	6 - Project Lifecycle	In Progress		
125	Stakeholder Engagement	NEB	During construction Trans Mountain will provide advanced and ongoing notification to users of the area to ensure they are fully aware of the activities that will occur and are occurring. Should the Project affect recreational users' infrastructure during construction, mitigation processes will ensure the infrastructure is left in the same, if not better condition.	Application Volume 5B, 3-11.	2 - During Construction	In Progress		
126	Stakeholder Engagement	NEB	Trans Mountain anticipates initiating Community Readiness Engagement in Q4 of 2014, which will focus on engaging local First Nations, community interest groups, economic development organizations, local governments, and municipal or provincial authorities in communities most closely linked to workforce hosting. Trans Mountain will document Community Readiness Engagement in a consultation update which will be submitted to the National Energy Board (NEB).	NEB IR No. 1.16a	1 - Prior to Construction	In Progress		
129	Stakeholder Engagement	NEB	Trans Mountain will continue to reach out to schools offering presentations or meetings to discuss potential concerns.	NEB IR No._2.008a	4 - Operations	In Progress		
137	Stakeholder Engagement	City of Abbotsford	Trans Mountain will hold discussions with Sumas canal owner/operator to establish if there any plans for its development and this will be considered in finalizing crossing depth during detailed engineering and design phase.	City of Abbotsford_IR_No._1.17e	1 - Prior to Construction	In Progress		
147	Stakeholder Engagement	City of Burnaby	Trans Mountain is willing to meet with the City of Burnaby to discuss planned and proposed projects or upgrades to municipal infrastructure to inform the design of the proposed pipeline Project.	City_Burnaby_IR_No._1.33.1.16q, City_Burnaby_IR_No._1.33.1.6s, City_Burnaby_IR_No._1.33.15d, City_Burnaby_IR_No._1.43.04a	1 - Prior to Construction	In Progress		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Implementation Status	Superseded by NEB Condition (if Number)	Additional Comments
151	Stakeholder Engagement	City of Burnaby	Trans Mountain will continue to engage with the City of Burnaby, including continuing to share updated project information, incorporating input and addressing concerns about the proposed Project as they arise. Should the City of Burnaby have feedback, Trans Mountain would welcome an opportunity to meet with the city, at a mutually convenient time, to discuss engineering design standards.	City_Burnaby_IR_No_1.3.3.07a	1 - Prior to Construction	In Progress		
172	Stakeholder Engagement	Metro Vancouver	Trans Mountain is committed to respectful, transparent and collaborative interactions with Metro Vancouver during the detailed engineering and construction planning phase and will continue to share updated project information and address Metro Vancouver's concerns about the TMEP as they arise.	Metro_Vancouver_IR_No_1.1.3.07a	6 - Project Lifecycle	In Progress		
178	Stakeholder Engagement	Regional District of Fraser-Fort George	Trans Mountain commits to continued consultation with the Village of Valemount and the Regional District to discuss planned or proposed municipal upgrades to infrastructure.	RD_of_Fraser-Fort_George_IR_No_1.12j	1 - Prior to Construction	In Progress	Superseded by NEB Condition	
179	Stakeholder Engagement	Regional District of Fraser-Fort George	Trans Mountain commits to full communication and co-operation with Valemount in coordinating, so as to eliminate or reduce construction disruptions to the Valemount Glacier Destination Resort.	RD_of_Fraser-Fort_George_IR_No_1.05a	1 - Prior to Construction	Complete		
256	Stakeholder Engagement	NEB	The Project will endeavour to work its construction schedule around such community events to the greatest extent possible.  Trans Mountain will be implementing a range of measures to reduce disturbance to community assets and events. Key mitigation measures include: avoiding important community features and assets during right-of-way finalization; narrowing the right-of-way in select areas; scheduling construction to avoid important community events, where possible; communication of construction schedules and plans with community officials; and other ongoing consultation and engagement with local and Aboriginal governments.	Part 2 - Consultation Update No. 1, 2-54	2 - During Construction	In Progress		
300	Stakeholder Engagement	City of Burnaby	If contaminated soil is encountered during construction, Trans Mountain will implement the Contamination Discovery Contingency Plan as identified in Section 5.2.4 of Volume 5A and Section 1, Appendix B of Volume 6B.	City_Burnaby_IR_No_1.4.3.03f	1 - Prior to Construction	In Progress	Superseded by NEB Condition	72, 73, 81
308	Stakeholder Engagement	City of Port Moody	Trans Mountain will meet with the City of Port Moody to discuss potential ecological enhancement opportunities for the Port Moody Arm area of Burrard Inlet.	City_of_Port_Moody_IR_No_1.4.2b	1 - Prior to Construction	Complete		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
436	Stakeholder Engagement	NEB	Those potentially affected by air emissions from the Edmonton Terminal, including residents, land users, and Aboriginal groups, will be provided with contact information for use in the event there are concerns about such air emissions.	NEB_IR_No._1.34e	3 - Prior to Operations	Superseded by NEB Condition	79	
457	Stakeholder Engagement	NEB	During construction Trans Mountain will provide advanced and ongoing notification to users of the area to ensure they are fully aware of the activities that will occur and are occurring.	Technical Update No. 1 & Consultation Update No. 2 - Part 2 Table 1.6.2-1	6 - Project Lifecycle	In Progress		
537	Stakeholder Engagement	Simon Fraser University	Trans Mountain will ensure that construction plans including construction schedule and traffic management plans will be communicated with SFU in a timely manner.	SFU_IR_No._2.1.7	1 - Prior to Construction	In Progress		
540	Stakeholder Engagement	NEB	Trans Mountain will consult with owners and operators of Merritt, Kamloops and Blue River airports as part of Community Readiness. Engagement and will continue throughout the Project planning and potential construction phases as more information becomes available.	NEB_IR_No._2.014	1 - Prior to Construction	Complete		
542	Stakeholder Engagement	NEB	Trans Mountain will continue to conduct open proactive engagement with adjacent communities with respect to future land use developments.	NEB_IR_No._4_33b2	1 - Prior to Construction	Complete		
553	Stakeholder Engagement	Environment Canada	Trans Mountain will engage tourism operators in the Jasper National Park area pertaining to the reactivation of the existing pipeline segment between Linton, AB and Hargreaves Station, BC through Jasper National Park.	GoC_EC_IR_No._2.147	1 - Prior to Construction	Complete		
572	Stakeholder Engagement	City of Abbotsford	As with all parties affected by its proposed Project, Trans Mountain is committed to continuing open and transparent dialogue with the City of Abbotsford throughout detailed project design, construction and operations to ensure that Trans Mountain's activities have as little impact as possible on neighbouring residents, businesses and institutions. In keeping with this commitment, Trans Mountain will continue to meet with the City of Abbotsford in 2015 as construction planning advances to continue discussing any interests or concerns the City of Abbotsford might have regarding the design, construction and operations of the proposed Project.	City_of_Abbotsford_IR_No._2.1.02	6 - Project Lifecycle	In Progress		
589	Stakeholder Engagement	City of Abbotsford	Trans Mountain commits to the City of Abbotsford that if some of the feedback is not reflected in the final design, Trans Mountain will be open and transparent with the City on rationale for the decision.	City_of_Abbotsford_IR_No._2.4.17a	1 - Prior to Construction	Superseded by NEB Condition	14,49	

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
593	Stakeholder Engagement	City of Abbotsford	As part of ongoing Engagement, Trans Mountain will undertake engagement and communications activities in Project route communities regarding constructions plans, anticipated impacts and effects of construction and mitigation measures to reduce the negative impacts of construction on local communities.	City_of_Abbotsford_IR_No._2.2.03b	2 - During Construction	In Progress		
612	Stakeholder Engagement	City of Burnaby	Trans Mountain will undertake engagement and communications activities in Project route communities regarding constructions plans, anticipated impacts and effects of construction and mitigation measures to reduce the negative impacts of construction on local communities.	City_Burnaby_IR_No._2.05db	6 - Project lifecycle	In Progress		
626	Stakeholder Engagement	City of Burnaby	Trans Mountain is willing to work with the City of Burnaby collaboratively to develop an approach to construction that minimizes potential impacts on the Barnet Escarpment Urban Trail.	City_Burnaby_IR_No._2.100	1 - Prior to Construction	In Progress		
633	Stakeholder Engagement	City of Burnaby	Trans Mountain commits to engaging with local government, Eagle Creek Streamkeepers, park users and other interest groups regarding proposed activities in local parks and sensitive areas along with associated Environmental mitigation and reclamation plans for restoring the area.	City_Burnaby_IR_No._2.134	6 - Project Lifecycle	In Progress		
636	Stakeholder Engagement	City of Burnaby	Trans Mountain commits to continue to meet with Metro Vancouver as construction planning advances to continue discussing any interests or concerns Metro Vancouver might have regarding the design, construction and operations of the proposed Project.	City_Burnaby_IR_No._2.136	6 - Project Lifecycle	In Progress		
640	Stakeholder Engagement	City of Coquitlam	As part of Trans Mountain's commitment to ongoing engagement, it will continue to engage with the United Boulevard business area regarding constructions plans.	City_of_Coquitlam_IR_No._2.A; City_of_Coquitlam_IR_No._2.B	1 - Prior to Construction	Complete		
642	Stakeholder Engagement	City of Coquitlam	Trans Mountain will coordinate with City of Coquitlam in developing and executing a protocol agreement for construction of TMEP within the City of Coquitlam.	City_of_Coquitlam_IR_No._2.D	1 - Prior to Construction	In Progress		
646	Stakeholder Engagement	NEB	Trans Mountain will hold two information sessions with commercial fishers and vessel operators in conjunction with Pacific Pilotage Authority (PPA) in Vancouver and Victoria.	NEB_IR_No._3.007	3 - Prior to Operations	Superseded by NEB Condition	131	
654	Stakeholder Engagement	City of Kamloops	Trans Mountain will conduct engagement with municipal governments and community stakeholders in hub communities to discuss worker accommodation options and strategies.	City_of_Kamloops_IR_No._2.09	1 - Prior to Construction	Superseded by NEB Condition	59	
655	Stakeholder Engagement	City of Kamloops	Trans Mountain will continue to update the Kamloops Hotel Association as more information about workforce housing projections and timelines becomes available.	City_of_Kamloops_IR_No._2.09	1 - Prior to Construction	In Progress		
656	Stakeholder Engagement	City of Kamloops	Trans Mountain will arrange procurement open houses or workshops at various local and regional locations to present potential supply opportunities to the project.	City_of_Kamloops_IR_No._2.11	1 - Prior to Construction	Scoping		

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Source(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (K) Number	Additional Comments
666	Stakeholder Engagement	City of New Westminster	Trans Mountain is committed to investing in community benefits initiatives in municipalities and regions crossed by the Project.	City_New_Westminster_CIR_No._2.C.3.iii	6 - Project Lifecycle	Superseded by NEB Condition	145	
678	Stakeholder Engagement	City of Port Moody	Trans Mountain is committed to engaging with Port Moody going forward and will invite the City and its constituents to future engagement opportunities.	City_Port_Moody_I_R_No._2.2.1	6 - Project Lifecycle	In Progress		
700	Stakeholder Engagement	City of Surrey	Trans Mountain will continue to share the results of any new studies or work being completed and communicate any changes or updates to Project plans with the City of Surrey.	City_of_Surrey_IR_No._2.1.i.a.i	6 - Project Lifecycle	In Progress		
723	Stakeholder Engagement	Township of Langley	Trans Mountain intends to consult with the Township of Langley regarding changes to the Township's parks, and minimizing construction damage, vehicle use and parking within the Township parks.	Langley_IR_No._2.18.a.i	Prior to Construction	Superseded by NEB Condition	14,49	
822	Stakeholder Engagement	Fraser Valley Regional District	Trans Mountain commits to providing the Fraser Valley Regional District (FVRD) with a link to the progress reports on the NEB website and notifying the district prior to conducting work in the FVRD.	FVRD_IR_No._2.16	2 - During Construction	Scoping		
825	Stakeholder Engagement	Fraser Valley Regional District	Trans Mountain Pipeline ULC (Trans Mountain) commits to provide the Fraser Valley Regional District (FVRD) with monthly odour and air quality complaint reports during construction of the Trans Mountain Expansion Project within the FVRD geographical boundary.	FVRD_IR_No._2.17a; FVRD_IR_No._2.17b	2 - During Construction	Scoping		
899	Stakeholder Engagement	Wembly Estates Strata Council	Trans Mountain commits that it will assign construction liaison roles as part of its construction team as a key point of contact for those impacted by its construction work.	Wembly_Estates_IR_No._2.1	2 - During Construction	Scoping		
925	Stakeholder Engagement	Simon Fraser University	Trans Mountain commits to engaging with SFU on construction schedule and activities including traffic management.	STU_IR_No._2.1.7	1 - Prior to Construction	In Progress		
1,028	Stakeholder Engagement	Regional District of Fraser-Fort George	As part of the Worker Code of Conduct, Trans Mountain will develop guidance for workers outlining appropriate, as well as prohibited, off-site recreational pursuits, use areas, and services in construction hub communities including the Village of Valemount.	RD_of_Fraser_Fort_George_IR_No._1.04a	1 - Prior to Construction	In Progress		
1,164	Stakeholder Engagement	Fraser Valley Watersheds Coalition	Trans Mountain will engage with the Fraser Valley Watersheds Coalition during detailed design phase to evaluate alignment options to cross Stewart Creek (Slough) to minimize disturbance of existing restoration works.	FVWC_IR_No._1.4.1	1 - Prior to Construction	Scoping		
1,439	Stakeholder Engagement	Township of Langley	Trans Mountain is committed to respectful, transparent, and collaborative interactions with the Township of Langley. Trans Mountain will continue to engage with the community, including continuing to share updated project information and addressing concerns about the proposed Trans Mountain Expansion Project as they arise.	Langley_IR_No._1.12d	1 - Prior to Construction	In Progress		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
1,650	Stakeholder Engagement	Sto:lo Collective	As noted in section 3.4.11 of the Socio-Economic Management Plan in Appendix C of Volume 6B (Filing ID A35253), Trans Mountain is committed to establishing a process by which community members can raise complaints or concerns related to Project activities or workers. Trans Mountain will ensure this process includes protocols for timely follow-up by Trans Mountain and/or its Contractors and transparent issue resolution. Trans Mountain will communicate this process to communities.	Sto:lo Collective Recommendation #74	2 - During Construction	In Progress		
1,709	Stakeholder Engagement	Environment Canada	Trans Mountain will engage tourism operators in the Jasper National Park area pertaining to the reactivation of the existing pipeline segment between Hinton, Alberta and Hargreaves Station, BC through Jasper National Park.	GoC_EC_IR_No._2.147	6 - Project Lifecycle	In Progress		
1,941	Stakeholder Engagement	Sto:lo Collective	Trans Mountain will communicate with local health authorities, emergency medical service authorities, social service authorities on the timing of the Project, duration of stay in the local community, expected number of people coming into the area and on-site health care plans.	Sto:lo Collective Recommendation #79, #80, #81	1 - Prior to Construction	Scoping		
2,511	Stakeholder Engagement	City of Burnaby	Prior to construction Trans Mountain will undertake a communications and notification program to ensure local businesses and members of the public are made aware of potential construction impacts including lane restrictions, road closures, and alternate access plans.	Reply Evidence 6.2 Stakeholder Engagement - p5 - line 24, City Burnaby IR No. 1,34,04	2 - During Construction	In Progress		
2,814	Stakeholder Engagement	City of Abbotsford	Trans Mountain will commit to special designs for the pipeline, in select areas for the Auguston development near RK 1117 to 1118 and beyond to McKee Road.	City of Abbotsford IR No._2.7.24	1 - Prior to Construction	Scoping		
2,836	Stakeholder Engagement	City of Kamloops	Prior to Construction, Trans Mountain will arrange procurement open houses or workshops at various local and regional locations to present potential supply opportunities to the project.	City of Kamloops_No_2.11	1 - Prior to Construction	Scoping		
3,799	Stakeholder Engagement	Town of Edson	Trans Mountain will provide a Community liaison to be located within community and will consider regular monthly meetings with identified stakeholders during construction.	Non-Regulatory Commitment	2 - During Construction	Scoping		
3,805	Stakeholder Engagement	Village of Valemount	Trans Mountain will provide advance notice of loss of access to backcountry roads (recreation – ATV and snowmobiles) as part of the Traffic Management Plan.	Non-Regulatory Commitment	2 - During Construction	Scoping		

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (ID Number)	Additional Comments
3.806	Stakeholder Engagement	City of Merritt; Merritt Chamber of Commerce	Trans Mountain will provide a Community Liaison within the community (not construction office) to manage inquiries and ease access during construction.	Non-Regulatory Commitment	2 - During Construction	In Progress		
3.808	Stakeholder Engagement	Workshop Participants	Trans Mountain will provide a Community Liaison for community complaints during construction. The Community liaison role will include specific response timeframes for telephone and web contacts; published reports that include nature of complaint, response provided, action completed, and timeframe.	Non-Regulatory Commitment	2 - During Construction	Scoping		
3.810	Stakeholder Engagement	Workshop Participants	Trans Mountain will provide chicken farmers with advance notification of construction to minimize sensory disturbance to birds.	Non-Regulatory Commitment	2 - During Construction	Scoping		
3.811	Stakeholder Engagement	Workshop Participants	Trans Mountain will provide a community liaison to provide a direct link to local governments.	Non-Regulatory Commitment	2 - During Construction	Scoping		
3.812	Stakeholder Engagement	Jasper Park Chamber of Commerce	Trans Mountain will provide advanced notification about construction and workforce loading to the Jasper Chamber of Commerce.	Non-Regulatory Commitment	1 - Prior to Construction	Scoping		
3.814	Stakeholder Engagement	City of Abbotsford	Trans Mountain will provide City of Abbotsford with copy of communication and notification plan for Sandy Hill neighbourhood when available.	Non-Regulatory Commitment	1 - Prior to Construction	Scoping		
3.819	Stakeholder Engagement	City of Coquitlam	Trans Mountain will repave the full width of roads requiring longitudinal open cut construction (excluding United Boulevard).	Non-Regulatory Commitment	2 - During Construction	Scoping		
14	Supply Chain Management	Ermeskine Cree Nation; Kelly Lake Cree Nation; Samson Cree Nation; Sucker Creek First Nation; Whitefish (Goodfish) Lake First Nation #128	In addition to the Employment Policy and the Education and Training Policy, which indicates that the Project is committed to maximize the use of local, regional, Aboriginal, provincial and Canadian businesses during the construction and operation of the Project.	Nations_IR_No._1.1.5	1 - Prior to Construction	Complete		Trans Mountain's Aboriginal Procurement Policy is complete.
83	Supply Chain Management	NEB	Environmental requirements will be incorporated into and contract documents related to the Project.	Application Volume 6A_2.1.	1 - Prior to Construction	Complete		
441	Supply Chain Management	Ermeskine Cree Nation; Kelly Lake Cree Nation; Samson Cree Nation; Sucker Creek First Nation; Whitefish (Goodfish) Lake First Nation #128	Trans Mountain will require all contractors to comply with Environmental health and safety policies and procedures that will form part of the Project construction contracts.	Nations_IR_No._1.3.6 d	2 - During Construction	Superseded by NEB Condition	64	

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (X) Number	Additional Comments
442	Supply Chain Management	Ermeskine Cree Nation; Kelly Lake Cree Nation; Samson Cree Nation; Sucker Creek First Nation; Whitefish (Goodfish) Lake First Nation #128	With respect to sole source and/or preferred source contracts, Trans Mountain will utilize direct awards, limited competitive bidding and inclusion of Aboriginal content as stated in the Kinder Morgan Canada (KMC) Aboriginal Procurement Policy (Volume 3B, Appendix G).	Nations IR No. 1.1.5 p	6 - Project Lifecycle	In Progress		
447	Supply Chain Management	NEB	To ensure that procurement opportunities will be accessible for Aboriginal communities and businesses, Trans Mountain has developed, in partnership with KMC's procurement team, an Aboriginal Procurement Policy. The policy provides guidance and allowances for facilitating Aboriginal participation in the Project. Once finalized, the content will be used in conjunction with the procurement and workforce development opportunities, and a plan will be created with interested communities for the realization of employment benefits with both Trans Mountain and prime contractors during the Project.	Application Volume 3B, section 1.4.2.	1 - Prior to Construction	Complete		
448	Supply Chain Management	NEB	Trans Mountain is committed to carrying out enhancement measures that will maximize the levels of local participation in Project opportunities through procurement strategies.	Application Volume 5B, 7-53.	1 - Prior to Construction	Complete		
450	Supply Chain Management	NEB	Trans Mountain will develop a Project-specific procurement policy 6 months prior to start of construction.	NEB IR No. 1.25a	1 - Prior to Construction	Complete		
452	Supply Chain Management	NEB	Trans Mountain will purchase Project-required goods and services from regional, Alberta and BC (Provincial) and Canadian suppliers, provided those suppliers meet the Project requirements on a best overall value basis, with added consideration for Aboriginal service providers.	Application Volume 5B, 7-191.	2 - During Construction	In Progress		
1,067	Supply Chain Management	NEB	Substation work will be contracted to firms specializing in high voltage electrical facilities. In Alberta, the electrical utilities having jurisdiction will contract the work. In BC, Trans Mountain will contract the work.	Application Volume 4B -45.	1 - Prior to Construction	Complete		
1,875	Supply Chain Management	NEB	Trans Mountain will work with Contractors to give first consideration to qualified regional suppliers of goods and services, where practical and in conformance with procurement policies.	Application Volume 5B s. 7.2.7.6 p7-190	1 - Prior to Construction	Complete		
2,627	Supply Chain Management	NEB	Trans Mountain will ensure all contracts, service agreements and materials that are not deemed critical to sustain the Project will first be sought from regional resources.	Application Volume 5B s. 7.2.7.6 p7-190	1 - Prior to Construction	Superseded by Management Plan		

## Trans Mountain Expansion Project

Commitment ID	Team Responsible for Commitment	Commitment Made To	Commitment Description	Sources(s) of Commitment	Project Stage for Implementation of Commitment	Commitment Status	Superseded by NEB Condition (x) Number	Additional Comments
3,579	Supply Chain Management	Ermineskin Cree Nation; Kelly Lake Cree Nation; Samson Cree Nation; Sucker Creek First Nation; Whitefish (Goodfish) Lake First Nation #128	Trans Mountain is committed to 'make best efforts' and will maximize procurement opportunities with Aboriginal groups engaged with the Project. Trans Mountain will develop a Project-specific Procurement Policy, which indicates that the Project is committed to maximize the use of local, regional, Aboriginal, provincial and Canadian businesses during the construction and operation of the Project.	Nations IR No.: 1.15 e	1 - Prior to Construction	Complete		Trans Mountain's Aboriginal Procurement Policy is complete.
3,580	Supply Chain Management	Sto:lo Collective	Trans Mountain is committed to continued engagement with Sto:lo representatives to discuss opportunities related to procurement.	Sto:lo Collective Recommendation #67	1 - Prior to Construction	Scoping		
3,581	Supply Chain Management	Sto:lo Collective	Trans Mountain is committed to maximizing Aboriginal procurement opportunities with the Project. Trans Mountain is committed to continued engagement with Sto:lo representatives to discuss opportunities related to procurement.	Sto:lo Collective Recommendation #67	1 - Prior to Construction	Scoping		
3,589	Supply Chain Management	Sto:lo Collective	Trans Mountain will have security in place to reduce the risk of vandalism in and around worksites. Trans Mountain welcomes the opportunity to learn about Sto:lo member security companies with this capacity. It is currently planned that the Contractors selected to complete the work will be hiring or otherwise providing subcontractors to secure the work-site during and after hours, including office complexes, equipment, etc.	Sto:lo Collective Recommendation #56	1 - Prior to Construction	Scoping		
3,590	Supply Chain Management	Sto:lo Collective	Trans Mountain will have security in place to reduce the risk of vandalism in and around worksites. Trans Mountain welcomes the opportunity to learn about Sto:lo member security companies with this capacity. It is currently planned that the Contractors selected to complete the work will be hiring or otherwise providing subcontractors to secure the work-site during and after hours, including office complexes, equipment, etc.	Sto:lo Collective Recommendation #56	1 - Prior to Construction	In Progress		

Available online: [https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/pdf/TMX\\_Final\\_report\\_en.pdf](https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/pdf/TMX_Final_report_en.pdf)

Joint Federal/Provincial Consultation  
and Accommodation Report for the

**Trans Mountain Expansion Project**

**November 2016**

**Pages 449 to / à 609  
are withheld pursuant to section  
sont retenues en vertu de l'article**

**68(a)**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**



**Fisheries and Oceans  
Canada**

Regional Director General  
Pacific Region  
200 - 401 Burrard Street  
Vancouver, British Columbia  
V6C 3S4

**Pêches et Océans  
Canada**

Directrice générale régionale  
Région du Pacifique  
Pièce 200 – 401 rue Burrard  
Vancouver (C.-B.)  
V6C 3S4

*Your file      Votre référence*

*Our file      Notre référence*  
17-HPAC-00071

David Safari  
VP Execution TMEP  
Trans Mountain Pipeline ULC  
2700, 300 – 5 Avenue SW  
Calgary, A.B. T2P 5J2

Dear Mr. Safari:

**Subject: *Fisheries Act Authorization***

Pursuant to Paragraph 35(2)(b) of the *Fisheries Act*, the Minister of Fisheries and Oceans Canada authorizes the carrying on of the works, undertakings or activities that result in serious harm to fish arising from construction of the Westridge Marine Terminal Expansion. A Paragraph 35(2)(b) *Fisheries Act* authorization is attached.

Our expectation is that you and your organization will continue to collaborate with affected Indigenous groups to address their concerns through various means, including ongoing engagement, continued efforts to negotiate agreements, cooperation with the Indigenous Advisory and Monitoring Committee, and the implementation of the measures identified in the Conditions of Authorization.

Please note that failure to comply with any of the terms of conditions of the attached Authorization may lead to prosecution under the *Fisheries Act*.

A copy of this Authorization should be kept on site while the work is in progress and upon request be provided to relevant federal or provincial officials. Work crews should be familiar with, and able to adhere to, the conditions.

If you or anyone conducting work on your behalf have any questions, please contact Alston Bonamis at our Regional Headquarters office at 604-340-3359 or by email at [Alston.Bonamis@dfo-mpo.gc.ca](mailto:Alston.Bonamis@dfo-mpo.gc.ca).

Yours sincerely,

Rebecca Reid  
Regional Director General

Attachment: *Fisheries Act Paragraph 35(2)(b) Authorization*

**Canada**

## **REQUEST FOR FISHERIES ACT AUTHORIZATION DECISION**

### **FISHERIES PROTECTION PROGRAM (FPP) - PACIFIC REGION**

<b>Project Name:</b> Trans Mountain Expansion Project Westridge Marine Terminal Expansion	<b>PATH #:</b> 17-HPAC-00071
<b>Proponent:</b> Trans Mountain Pipeline ULC	<b>FPU:</b> Oil and Gas
<b>Location/Nearest Town:</b> Burnaby, British Columbia	<b>Assessor:</b> Alston Bonamis
<b>Waterbody Name:</b> Burrard Inlet	<b>Supervisor:</b> Tracey Sandgathe

#### ***Fisheries Act Subsection 35(2)(b) Authorization (FAA) Summary***

FAA to carry out any work, undertaking or activity that is likely to result in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a fishery

Normal Circumstance  Emergency Circumstance  Authorization Amendment  Authorization REFUSED

#### **PROJECT DESCRIPTION**

Trans Mountain Pipeline ULC ("Trans Mountain" or the "Proponent") is proposing to expand its existing 1,150 km pipeline system between Edmonton, Alberta and Burnaby, British Columbia, which includes modification and expansion of the existing Westridge Marine Terminal (the "Terminal") in the central harbour of Burrard Inlet in Burnaby, BC.

Works, undertakings or activities involved in the construction of the Terminal expansion include:

- Land-based site preparation, including clearing of marine riparian vegetation;
- Installation of a bulkhead wall, which will be constructed through excavation of existing shoreline riprap, linear installation of circular sheet-pile cells to form the bulkhead wall, and infilling of the shoreline area behind the bulkhead wall to accommodate new onshore infrastructure;
- Installation of permanent piles for the construction of three new loading berths, access trestle, utility dock, and foam water supply pump house platform;
- Placement of concrete anchor blocks to secure marine containment booms;
- Decommissioning and removal of the existing small utility dock;
- Installation of temporary template piles to support the placement and installation of permanent piles, and installation of temporary working piles to support a marine construction office and foreshore construction;
- Marine riparian clearing for construction of the marine construction office;
- Placement of temporary marine anchors for securing the marine construction safety boom, and installation of concrete anchor blocks to anchor the turbidity curtain;
- Excavation of additional rip-rap within an area extending 5 m seaward of the bulkhead wall for the installation of sheet pile cells, followed by replacement of the excavated rip-rap over the same area;
- Installation of surface water runoff outfall pipes and rip-rap placement to support and armour the outfall pipes; and
- Construction and operation of marine water intakes which will be enclosed within a fish screen, along with excavation and placement of rip-rap beneath footprint of fish screen.

**The works, undertakings, or activities associated with the proposed project that are likely to result in serious harm to fish are:**

- Installation of an approximately 363 m long bulkhead wall constructed via:
  - excavation of existing shoreline rip-rap and foreshore substrates;
  - installation of circular sheet pile cells to form the wall; and
  - in-filling within the circular sheet pile cells and backfilling of the area between the existing shoreline at the terminal and the bulkhead wall.
- Installation of permanent piles for the construction of three new loading berths, an access trestle, a utility dock, and a foam water supply pump house platform;
- Installation of working piles in the upper intertidal zone to support a marine construction office; and
- Installation of a surface water run-off outfall at the western end of the terminal foreshore expansion within the upper intertidal zone.

**SERIOUS HARM: LEADR** Completed  Yes  No

DFO has determined serious harm to fish is likely to result from the following proposed works, undertakings or activities:

- Destruction of **4,196 m<sup>2</sup>** of intertidal rocky habitat from installation of the bulkhead wall and infilling behind the bulkhead wall to the shoreline;
- Destruction of **1,266 m<sup>2</sup>** of subtidal rocky habitat from infilling behind the bulkhead wall to the shoreline;
- Destruction of **455 m<sup>2</sup>** subtidal soft-sediment habitat from installation of permanent piles;
- Permanent alteration of **217 m<sup>2</sup>** of intertidal rocky habitat and **328 m<sup>2</sup>** of subtidal rocky habitat to soft sediment habitat from excavation of riprap prior to installation of the bulkhead wall;
- Permanent alteration of **3 m<sup>2</sup>** of intertidal habitat from the installation of working piles to support the marine construction office; and
- Permanent alteration of **113 m<sup>2</sup>** of intertidal rocky habitat from installation of a surface water run-off outfall pipe at the western end of the terminal foreshore expansion.

These works, undertakings or activities are anticipated to affect foraging, refuge, rearing, migration, and spawning rocky and soft-sediment habitat for invertebrate and finfish species, resulting in a localized effect to fish and fish habitat.

**AQUATIC SPECIES AT RISK: SARA S. 32, 33, 58 prohibitions apply**  Yes  No

SARA S.73 conditions met:	<input type="checkbox"/> Yes <input type="checkbox"/> No
SARA conditions included in FAA:	<input type="checkbox"/> Yes <input type="checkbox"/> No

**OFFSETTING PLAN**

The Proponent is proposing to construct a rock-reef complex in the southwest corner of the terminal's water lot to offset potential serious harm to fish from the proposed works, undertakings or activities. The rock-reef will cover an area of 9,011 m<sup>2</sup>, resulting in a habitat offsetting ratio of approximately 1.4:1. The Proponent anticipates that this offset ratio will offset losses to fisheries productivity from the proposed works, undertakings or activities and will also account for temporal lags associated with the onset in the productivity of the new habitat created.

The rock-reef complex will be made up of three different types of reefs overlapping the intertidal and subtidal zones in the vicinity of the foreshore expansion, including:

1. **Nursery reefs** – composed of two reef components, covering an area of 3,880 m<sup>2</sup> and made-up of a 1.5 m thick layer of large cobbles and small boulders, intended to provide refuge for juvenile fish, including juvenile rockfish and salmon;
2. **Integrated reefs** – composed of three components, covering an area of 2,193 m<sup>2</sup> with 1/3 low-relief and 2/3 high-relief rocky habitat for juvenile and adult rockfish; and
3. **Adult reefs** – composed of five components, covering 2,938 m<sup>2</sup> and made-up of a 1.5 m thick layer of medium-large boulders intended to provide refuge habitat for adult rockfish.

The proposed rock reefs will primarily benefit groundfish species, such as rockfish and lingcod, but will also provide valuable habitat for juvenile salmon and invertebrates, such as Dungeness crab, barnacles, mussels and sea stars. The rock reefs are anticipated to enhance primary and secondary productivity in the area and will increase the diversity of fish associated with rock reefs.

The design and the location of the proposed rock reef offsetting is in line with DFO's *Fisheries Productivity Investment Policy: A Proponent's Guide to Offsetting*, as it will counterbalance unavoidable serious harm to fish resulting from the works, undertakings and activities, and maintain or improve the productivity of commercial, recreational or Aboriginal fisheries. DFO's assessment of the Offsetting Plan is described in the document titled *Offsetting Summary – Westridge Marine Terminal Expansion, Trans Mountain Expansion Project*.

**LETTER OF CREDIT**

<input checked="" type="checkbox"/> Yes    Amount: CAD 3,200,000.00	<input type="checkbox"/> No    Reason: <input type="checkbox"/> Fed <input type="checkbox"/> Prov/Territory <input type="checkbox"/> Emergency
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**Considerations**

**REGULATORY TIMELINE** (90 day clock end date): December 4, 2017

**SECTION 6 FACTORS:** Checklist completed  Yes  No

The works, undertakings or activities associated with the expansion of the Westridge Marine Terminal are anticipated to result in the permanent alteration to and destruction of fish habitat. All five species of Pacific salmon are likely to be affected, in addition to Pacific Herring, Rockfish, and Dungeness Crab, among others. Nursery, rearing, spawning, migration, and food supply habitat will likely be affected. While these effects will affect the ability to achieve relevant fisheries management objectives (FMOs), the identified avoidance, mitigation, and offsetting measures will address effects such that the FMO goals can be achieved. The proposed Offsetting Plan aims to construct fish habitat in the vicinity of the impact that will replace the habitat permanently altered or destroyed due to the works, undertakings or activities, and provides diverse and complex fish habitat characteristics intended to support finfish and invertebrates. The Offsetting Plan also meets all of the guiding principles for offsetting as set out in part 3.2 of the *Fisheries Productivity Investment Policy (2013)*. No public consultation was conducted during this regulatory review process as there is no requirement to do so, and issues raised by the public during the regulatory stage are similar to those raised during the EA phase (e.g., oil spills, effects on fish and fish habitat at pipeline watercourse crossings, impacts to the Southern Resident Killer Whale, etc.).

With the implementation of avoidance, mitigation and offset measures, DFO is of the view that the issuance of the requested authorization will provide for the ongoing sustainability and productivity of CRA fisheries.

**INDIGENOUS CONSULTATION:** Completed  Yes  No

DFO has been consulting with 33 potentially affected Indigenous groups on the Proponent's Application for Authorization, including Tsleil-Waututh Nation (TWN), Squamish Nation, Musqueam Indian Band, Stó:lō communities (24 individual groups), and Hul'qumi'num communities (6 individual groups). DFO's engagement with the 33 identified Indigenous groups is summarized in the Consultation Summary Report. Three Indigenous groups were identified as being owed a level of consultation from the moderate to deeper end of the Haida spectrum: TWN (deep), Musqueam Indian Band (moderate), and Squamish Nation (moderate). The other 30 groups were identified as being owed a low level of consultation. Since commencing consultation, DFO has received responses and has engaged in more specific correspondence with eight groups, including TWN and Musqueam Indian Band.

DFO did not conduct consultations strictly following its preliminary depth of consultation assessment; instead, DFO opted to engage in consultation at a depth commensurate to the level at which individual groups wanted to engage in by offering to meet with groups in-person and by providing copies of the Draft Conditions of Authorization. Thus, DFO strived to meaningfully consult with individual Indigenous groups to the extent and depth that each group wished to engage in consultations with DFO.

Where possible, DFO has aimed to address the concerns raised by potentially affected Indigenous groups within conditions of a potential *Fisheries Act* Authorization, and is relying on a variety of measures informed through consultations with Indigenous groups and through DFO's participation in the environmental assessment review process for the Trans Mountain Expansion Project.

Departmental Legal Service Unit (DLSU) provided an opinion to DFO on the overall adequacy of Indigenous consultation. This opinion also assessed the merits of proposed accommodation measures (i.e., the supplementary measures). DLSU concluded that there is a low risk of being successfully legal challenged on the procedural aspects of consultation with respect to any of the groups consulted at this regulatory phase. DLSU concluded that the risk of a successful challenge on the substantive aspects of consultation is low with all groups concerned, with the exception of consultations with TWN. After considering DLSU advice, the Department is of the view that it may conclude Indigenous consultation and proceed with making a regulatory decision.

## COMMENTS

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## Recommendation and Approval

It is recommended that you approve the attached:

- paragraph 35(2)(b) *Fisheries Act* Authorization
- paragraph 35(2)(b) *Fisheries Act* Authorization amendment
- refusal to authorize under paragraph 35(2)(b) of the *Fisheries Act*

	Recommended	Approved	Date
Regulatory Reviews Manager	<i>Mark Brinchager</i>	<del><i>Mark Brinchager</i></del>	<del>SEP 05 2017</del>
Regional Director, EMB	<i>Mark Brinchager</i>	<del><i>Mark Brinchager</i></del>	<del>SEP 07 2017</del>
Regional Director General		<i>Mark Brinchager</i>	SEP 08 2017

**Pages 614 to / à 660  
are withheld pursuant to sections  
sont retenues en vertu des articles**

**21(1)(b), 23**

**of the Access to Information Act  
de la Loi sur l'accès à l'information**

SUPPLEMENT Vol. 150, No. 50

SUPPLÉMENT Vol. 150, n° 50

# Canada Gazette

## Part I



# Gazette du Canada

## Partie I

OTTAWA, SATURDAY, DECEMBER 10, 2016

OTTAWA, LE SAMEDI 10 DÉCEMBRE 2016

### National Energy Board

To Trans Mountain Pipeline  
ULC for the Trans Mountain  
Expansion Project:  
(i) Order — Certificate of  
Public Convenience and  
Necessity OC-001-064;  
(ii) Amending Order in  
Council AO-002-OC-49; and  
(iii) Amending Order in  
Council AO-003-OC-2

### Office national de l'énergie

(i) Ordonnance — Certificat  
d'utilité publique OC-001-064;  
(ii) Ordonnance  
modificatrice AO-002-OC-49;  
(iii) Ordonnance  
modificatrice AO-003-OC-2 à  
Trans Mountain Pipeline ULC  
pour le projet d'agrandissement  
du réseau de Trans Mountain

**NATIONAL ENERGY BOARD**

**NATIONAL ENERGY BOARD ACT**

*To Trans Mountain Pipeline ULC for the Trans Mountain Expansion Project: (i) Order — Certificate of Public Convenience and Necessity OC-001-064; (ii) Amending Order in Council AO-002-OC-49; and (iii) Amending Order in Council AO-003-OC-2*

P.C. 2016-1069

November 29, 2016

Whereas, on December 16, 2013, Trans Mountain Pipeline ULC ("Trans Mountain") applied to the National Energy Board ("the Board") pursuant to Part III of the *National Energy Board Act* for a certificate of public convenience and necessity in respect of the proposed construction and operation of the Trans Mountain Expansion Project ("the Project");

Whereas, on May 19, 2016, having reviewed Trans Mountain's application and conducted an environmental assessment of the Project, the Board submitted its report on the Project entitled *Trans Mountain Expansion Project OH-001-2014* ("the Board's Report") to the Minister of Natural Resources, pursuant to section 29 of the *Canadian Environmental Assessment Act, 2012* and section 52 of the *National Energy Board Act*;

Whereas, by Order in Council P.C. 2016-435 of June 3, 2016, the Governor in Council, pursuant to subsection 54(3) of the *National Energy Board Act*, extended the time limit referred to in that subsection by four months to allow for additional Crown consultation with potentially affected Aboriginal groups, public engagement, and an assessment of the upstream greenhouse gas emissions associated with the Project;

Whereas the Governor in Council, having considered Aboriginal concerns and interests identified in the *Joint Federal/Provincial Consultation and Accommodation Report for the Trans Mountain Expansion Project* dated November 21, 2016, is satisfied that the consultation process undertaken is consistent with the honour of the Crown and that the concerns and interests have been appropriately accommodated;

Whereas the Governor in Council accepts the Board's recommendation that the Project will be, if the terms and conditions set out in Appendix 3 of the Board's Report are complied with, required by the present and future public convenience and necessity under the *National Energy Board Act* and will not likely cause

**OFFICE NATIONAL DE L'ÉNERGIE**

**LOI SUR L'OFFICE NATIONAL DE L'ÉNERGIE**

*(i) Ordonnance — Certificat d'utilité publique OC-001-064; (ii) Ordonnance modificatrice AO-002-OC-49; (iii) Ordonnance modificatrice AO-003-OC-2 à Trans Mountain Pipeline ULC pour le projet d'agrandissement du réseau de Trans Mountain*

C.P. 2016-1069

Le 29 novembre 2016

Attendu que, le 16 décembre 2013, Trans Mountain Pipeline ULC (« Trans Mountain ») a présenté à l'Office national de l'énergie (« l'Office »), sous le régime de la partie III de la *Loi sur l'Office national de l'énergie*, une demande visant l'obtention d'un certificat d'utilité publique concernant la construction et l'exploitation projetées quant au projet d'agrandissement du réseau de Trans Mountain (« projet »);

Attendu que, le 19 mai 2016, après avoir examiné la demande de Trans Mountain et effectué l'évaluation environnementale du projet, l'Office a présenté au ministre des Ressources naturelles son rapport sur le projet intitulé *Projet d'agrandissement du réseau de Trans Mountain OH-001-2014* (ci-après le « rapport de l'Office »), conformément à l'article 29 de la *Loi canadienne sur l'évaluation environnementale (2012)* et à l'article 52 de la *Loi sur l'Office national de l'énergie*;

Attendu que, par le décret C.P. 2016-435 du 3 juin 2016, le gouverneur en conseil, en vertu du paragraphe 54(3) de la *Loi sur l'Office national de l'énergie*, a prorogé de quatre mois le délai visé à ce paragraphe afin de permettre la tenue de consultations supplémentaires de la Couronne auprès des groupes autochtones potentiellement touchés, la participation du public et une évaluation des émissions de gaz à effet de serre en amont associées au projet;

Attendu que le gouverneur en conseil est convaincu, après examen des préoccupations et des intérêts des groupes autochtones cernés dans le rapport sur la consultation de la Couronne intitulé *Rapport fédéral-provincial sur les consultations et les accommodements pour le projet d'agrandissement de Trans Mountain* du 21 novembre 2016, que le processus de consultation est compatible avec l'honneur de la Couronne et que les préoccupations et intérêts ont fait l'objet de mesures d'accommodement appropriées;

Attendu que le gouverneur en conseil accepte la recommandation de l'Office selon laquelle, si les conditions énoncées à l'annexe 3 du rapport de l'Office sont respectées, le projet présentera, aux termes de la *Loi sur l'Office national de l'énergie*, un caractère d'utilité publique, tant pour le présent que pour le futur, et que

significant adverse environmental effects under the Canadian Environmental Assessment Act, 2012;

Whereas the Governor in Council, having considered the estimated upstream greenhouse gas emissions associated with the Project and identified in Environment Canada's report entitled *Trans Mountain Pipeline ULC – Trans Mountain Expansion Project: Review of Related Upstream Greenhouse Gas Emissions Estimates*, and the Government of Alberta's *Climate Leadership Plan* commitment to cap oil sands emissions at 100 megatonnes of carbon dioxide equivalent per year, is satisfied that the Project is consistent with Canada's commitments in relation to the Paris Agreement on Climate Change;

Whereas the Governor in Council has considered the Ministerial Panel's report on the Project entitled *Report from the Ministerial Panel for the Trans Mountain Expansion Project*, dated November 1, 2016;

And whereas the Governor in Council considers that the Project would increase access to markets for Canadian oil and support environmentally sustainable resource development;

Therefore, His Excellency the Governor General in Council, on the recommendation of the Minister of Natural Resources,

(a) pursuant to subsection 31(1) of the *Canadian Environmental Assessment Act, 2012*, decides that, taking into account the terms and conditions referred to in paragraph (b), the Trans Mountain Expansion Project is not likely to cause significant adverse environmental effects, and directs the National Energy Board to issue a decision statement concerning that Project;

(b) pursuant to subsection 54(1) of the *National Energy Board Act*, directs the National Energy Board to issue Certificate of Public Convenience and Necessity OC-64 to Trans Mountain Pipeline ULC, in respect of the proposed construction and operation of the Trans Mountain Expansion Project, subject to the terms and conditions set out in Appendix 3 of the National Energy Board Report of May 19, 2016 entitled *Trans Mountain Expansion Project OH-001-2014*; and

(c) pursuant to subsection 21(2) of the *National Energy Board Act*, approves the issuance by the National Energy Board to Trans Mountain Pipeline ULC of Amending Order AO-002-OC-49 and Amending Order AO-003-OC-2, substantially in the annexed form.

le projet n'est pas susceptible d'entraîner des effets environnementaux négatifs importants pour l'application de la *Loi canadienne sur l'évaluation environnementale (2012)*;

Attendu que le gouverneur en conseil, après avoir pris en compte les estimations d'émissions de gaz à effet de serre en amont associées au projet figurant dans le rapport d'Environnement Canada intitulé *Trans Mountain Pipeline ULC – Projet d'agrandissement du réseau de Trans Mountain : Examen des estimations des émissions de gaz à effet de serre en amont associées au projet* ainsi que le plan intitulé *Climate Leadership Plan* du gouvernement de l'Alberta dans le cadre duquel celui-ci s'engage à fixer le plafond des émissions provenant des sables bitumineux à 100 mégatonnes d'équivalent en dioxyde de carbone par année, est convaincu que le projet est compatible avec les engagements pris par le Canada dans le cadre de l'Accord de Paris sur le climat;

Attendu que le gouverneur en conseil a pris en compte le rapport du 1<sup>er</sup> novembre 2016 intitulé *Rapport du comité ministériel pour le projet d'agrandissement du réseau de Trans Mountain* établi par le comité ministériel sur le projet;

Attendu que le gouverneur en conseil estime que le projet permettrait d'accroître l'accès du pétrole canadien aux marchés et faciliterait, sur le plan environnemental, le développement durable des ressources,

À ces causes, sur recommandation du ministre des Ressources naturelles, Son Excellence le Gouverneur général en conseil :

a) en vertu du paragraphe 31(1) de la *Loi canadienne sur l'évaluation environnementale (2012)*, décide que, compte tenu des conditions visées à l'alinéa b), la réalisation du projet d'agrandissement du réseau de Trans Mountain n'est pas susceptible d'entraîner des effets environnementaux négatifs et importants et donne instruction à l'Office national de l'énergie de faire une déclaration à l'égard de ce projet;

b) en vertu du paragraphe 54(1) de la *Loi sur l'Office national de l'énergie*, donne à l'Office national de l'énergie instruction de délivrer à Trans Mountain Pipeline ULC le certificat d'utilité publique OC-64 à l'égard de la construction et l'exploitation projetées quant au projet d'agrandissement du réseau de Trans Mountain et d'assortir le certificat des conditions figurant à l'annexe 3 du rapport de l'Office national de l'énergie, du 19 mai 2016, intitulé *Projet d'agrandissement du réseau de Trans Mountain OH-001-2014*;

c) en vertu du paragraphe 21(2) de la *Loi sur l'Office national de l'énergie*, agrée la délivrance par l'Office national de l'énergie à Trans Mountain Pipeline ULC des ordonnances

modificatrices AO-002-OC-49 et AO-003-OC-2, conformes en substance au texte ci-après.

## EXPLANATORY NOTE

(This note is not part of the Order.)

### Proposal and objectives

On December 16, 2013, Trans Mountain Pipeline ULC (Trans Mountain), a wholly owned subsidiary of Kinder Morgan Canada, applied to the National Energy Board (NEB or the Board) under sections 52 and 58 of the *National Energy Board Act* (NEB Act), requesting that Certificate of Public Convenience and Necessity (Certificate) OC-001-064 be issued by the NEB for the construction and operation of the Trans Mountain Expansion Project (the Project).

The Project consists of twinning its existing 1 147 kilometre (km) Trans Mountain Pipeline system between Edmonton, Alberta (AB), and Burnaby, British Columbia (B.C.), and expanding its Westridge Marine Terminal (WMT) in Burrard Inlet. The Project would include approximately 987 km of new, buried pipeline and would increase the capacity of the pipeline system from 47 690 cubic metres per day ( $m^3/d$ ) or 300 000 barrels per day (bbl/d) to 141 500  $m^3/d$  (890 000 bbl/d).

On May 19, 2016, following its hearing and review of the Project, the Board issued its Report and recommendations to the Government of Canada. It recommended that the Project would be in the public interest and that the Governor in Council issue the Certificate for the construction and operation of the Project, subject to 157 terms and conditions that the Board considers necessary or desirable to ensure the safe construction and operation of the pipeline, mitigate environmental impacts and address potential impacts on Indigenous rights and interests identified during its review of the Project.

The Board is also seeking approval to issue two amending orders in council pursuant to subsection 21(2) of the NEB Act, including

1. Amending Order AO-002-OC-49 for the removal from Certificate OC-49 (transfer from Line 1 and put into service on Line 2). This is a 150 km nominal pipe size (NPS) 36 inch pipeline segment from Hinton to Hargreaves;
2. Amending Order AO-003-OC-2 for
  - Authorization to decommission
    - one existing tank at the Edmonton Terminal West Tank Area;
    - one existing tank at the Burnaby Terminal

## NOTE EXPLICATIVE

(La présente note ne fait pas partie du décret.)

### Proposition et objectifs

Le 16 décembre 2013, Trans Mountain Pipeline ULC (Trans Mountain), filiale en propriété exclusive de Kinder Morgan Canada, a déposé à l'Office national de l'énergie (ONE ou l'Office), en vertu des articles 52 et 58 de la *Loi sur l'Office national de l'énergie* (Loi sur l'Office), une demande de délivrance, par l'Office, du certificat d'utilité publique OC-001-064 (le certificat) en vue de la construction et de l'exploitation du projet d'agrandissement du réseau de Trans Mountain (le projet).

Le projet concerne, d'une part, le doublement du réseau actuel de Trans Mountain Pipeline, qui s'étend sur 1 147 kilomètres (km) entre Edmonton, Alberta (Alb.), et Burnaby, Colombie-Britannique (C.-B.), et d'autre part, l'agrandissement de son terminal maritime Westridge (TMW) de la baie Burrard. Le projet comprendrait un nouveau pipeline souterrain de quelque 987 km, ce qui ferait passer la capacité du réseau de 47 690 mètres cubes par jour ( $m^3/j$ ) ou 300 000 barils par jour (b/j) à 141 500  $m^3/j$  ou 890 000 b/j.

Le 19 mai 2016, à l'issue de son processus d'audience et d'examen du projet, l'Office a transmis son rapport et ses recommandations au gouvernement du Canada. L'Office a conclu que le projet est dans l'intérêt public et a recommandé que le gouverneur en conseil délivre un certificat pour la construction et l'exploitation du projet, sous réserve des 157 conditions et modalités qu'il estime nécessaires ou souhaitables pour assurer la sécurité de la construction et de l'exploitation du pipeline, atténuer les répercussions sur l'environnement et tenir compte des effets éventuels identifiés au cours de son examen sur les droits ancestraux et les intérêts des autochtones.

L'Office sollicite par ailleurs l'approbation pour délivrer deux ordonnances modificatrices aux termes du paragraphe 21(2) de la Loi sur l'Office, soit :

1. Ordonnance modificatrice AO-002-OC-49 pour le retrait du certificat OC-49 (transfert à partir de la canalisation 1 et mise en service pour la canalisation 2). Il s'agit du tronçon de pipeline de 150 km, de Hinton à Hargreaves, de diamètre nominal de tuyau (NPS) de 36 pouces;
2. Ordonnance modificatrice AO-003-OC-2 pour :
  - Autorisation de mettre hors service :
    - un réservoir existant à la zone de réservoirs du terminal Edmonton Ouest;

- Authorization to reactivate
  - 150 km NPS 24 pipeline segment from Hinton to Hargreaves;
  - 43 km NPS 24 pipeline segment from Darfield to Black Pines; and
  - Niton Pump Station
- Removal from Certificate OC-2 (transfer from Line 1 and put into service on Line 2):
  - 43 km NPS 30 pipeline segment from Darfield to Black Pines

- un réservoir existant au terminal de Burnaby.
- Autorisation de remettre en service :
  - le tronçon de pipeline de 150 km, de Hinton à Hargreaves, de NPS de 24 po;
  - le tronçon de pipeline de 43 km, de Darfield à Black Pines, de NPS de 24 po;
  - la station de pompage de Niton.
- Le retrait du certificat OC-2 (transfert à partir de la canalisation 1 et mise en service pour la canalisation 2) :
  - du tronçon de pipeline de 43 km, de Darfield à Black Pines, de NPS de 30 po.

### Background

Trans Mountain submitted its application to the NEB for a certificate for the Project on December 16, 2013. The purpose of the Project is to increase capacity of the pipeline system from 300 000 bbl/d to 890 000 bbl/d, by twinning the existing Trans Mountain pipeline that currently transports oil from Edmonton to Burnaby.

The pipeline would follow an existing right-of-way for 89 per cent of its 1 147 km length. The Project would also expand the WMT by adding two berths to allow the terminal to increase, from five to 34, the number of tankers it receives per month. This would increase Project-related tanker traffic through the Burrard Inlet by up to 13.4 per cent and in the Juan de Fuca Strait by 6.6 per cent over current levels.

For the purposes of the *Canadian Environmental Assessment Act, 2012* (CEAA, 2012), the construction and operation of a new pipeline with a length of 40 km or more are designated activities linked to the Board, as prescribed under item 46 of the Schedule to the *Regulations Designating Physical Activities* (SOR/2012-147). The Project is therefore a "designated project" in relation to which the Board must conduct an environmental assessment (EA) in accordance with the requirements of the CEAA, 2012. The NEB must ensure that Canadians have the opportunity to participate in the EA, and issue an EA report, which is, in this instance, included in the NEB recommendation report.

On January 27, 2016, the Government of Canada introduced an interim strategy for decision making on major projects undergoing review. Under the interim approach, five principles were used to guide the Government's decisions on energy projects: (i) no project proponent will be asked to return to the starting-line; (ii) decisions will be based on science, traditional knowledge of Indigenous peoples and other relevant evidence; (iii) the views of the public and affected communities will be sought and considered; (iv) Indigenous peoples will be meaningfully consulted, and where appropriate, impacts on their rights and

### Contexte

Trans Mountain a soumis à l'Office sa demande de certificat pour le projet le 16 décembre 2013. Le projet a pour objectif de faire passer la capacité du réseau pipelinier de 300 000 b/j à 890 000 b/j, en doublant le réseau actuel de Trans Mountain qui transporte le pétrole d'Edmonton à Burnaby.

Le pipeline suivrait une emprise existante sur 89 % de sa longueur de 1 147 km. De plus, le projet agrandirait le TMW en ajoutant deux quais afin de hausser de 5 à 34 le nombre de pétroliers que reçoit le terminal par mois. L'augmentation du trafic de pétroliers lié au projet à la baie Burrard pourrait atteindre 13,4 %, et au détroit Juan de Fuca, 6,6 %.

Aux fins de la *Loi canadienne sur l'évaluation environnementale (2012)* [LCEE 2012], la construction et l'exploitation d'un nouveau pipeline de 40 km de long ou plus sont des activités désignées qui sont liées à l'Office aux termes de la disposition 46 de l'annexe du *Règlement désignant les activités concrètes* (DORS/2012-147). Le projet est donc un « projet désigné » pour lequel l'Office doit effectuer une évaluation environnementale conformément aux exigences de la LCEE 2012. L'Office doit veiller à ce que les Canadiens et les Canadiennes puissent participer à l'évaluation environnementale (EE), et produire un rapport d'EE qui, dans le cas présent, fait partie de son rapport de recommandations.

Le 27 janvier 2016, le gouvernement du Canada a adopté une stratégie provisoire précisant sa vision de l'examen des grands projets en cours. Conformément à cette approche provisoire, cinq principes ont été utilisés pour orienter les décisions du gouvernement à l'endroit des projets énergétiques : (i) aucun promoteur n'aura à retourner au point de départ; (ii) les décisions se fonderont sur les données scientifiques, les connaissances autochtones traditionnelles et d'autres données pertinentes; (iii) le gouvernement s'enquerra des points de vue du public et des collectivités concernées pour les prendre

interests will be accommodated; and (v) direct and upstream greenhouse gas emissions linked to the projects under review will be assessed. For the Trans Mountain Expansion Project, the principles were implemented in measures such as

- Undertaking deeper consultations with Indigenous peoples and providing funding to support participation in these consultations;
- Assessing the upstream greenhouse gas (GHG) emissions associated with this Project and making this information public; and
- Appointing a panel to engage communities, including Indigenous communities potentially affected by the Project, to seek their views and report back to the Minister of Natural Resources.

To support these commitments, the Governor in Council extended, by Order in Council P.C. 2016-435 dated June 3, 2016, the regulatory time limit for a decision on the Project by four months. As a result, the Governor in Council has until December 19, 2016 (instead of August 19, 2016) to make a decision. This additional time provided for deeper Crown consultation with Indigenous groups and engagement with the public in addition to assessing the GHG emissions associated with the Project. Budget 2016 increased participant funding to Indigenous groups from \$700,000 to \$2.2 million.

#### **National Energy Board review process**

##### **Board consultation process**

In April 2014, the NEB issued Hearing Order OH-001-2014, setting out the process for the public review of the Project.

The Board received and considered a total of 2 118 applications to participate in the OH-001-2014 hearing for the Project. The Board granted standing to participate to 1 650 applicants. Out of these 1 650 hearing participants, 400 participated as intervenors and the remaining as commenters. Hearing participants were from various groups, including federal and provincial governments, business, Indigenous people, landowners, individuals and non-government organizations.

In July 2013, the Board announced it would make \$1.5 million available to eligible intervenors to participate in the hearing. However, the funding envelope was subsequently increased to a total of \$3,085,370 allocated to 72 intervenors.

en compte; (iv) les peuples autochtones seront consultés sérieusement et, s'il y a lieu, le gouvernement fera en sorte de tenir compte des répercussions eu égard à leurs droits et intérêts; et (v) les émissions de gaz à effet de serre (GES) directes et en amont attribuables au projet à l'étude seront évaluées. En ce qui concerne le projet d'agrandissement de Trans Mountain, les principes ont été mis en œuvre dans des mesures telles que :

- mener des consultations plus poussées avec les autochtones et fournir un financement pour leur participation à celles-ci;
- évaluer les émissions de GES en amont associées au projet et rendre l'information publique;
- nommer un comité ministériel pour consulter les collectivités, y compris les collectivités autochtones pouvant être touchées par le projet, afin d'avoir leur avis et de rendre compte au ministre des Ressources naturelles.

À l'appui de ces engagements, par le décret P.C. 2016-435 du 3 juin 2016, le gouverneur en conseil a prolongé de quatre mois le délai prescrit par la réglementation pour rendre une décision sur le projet. Il a maintenant jusqu'au 19 décembre 2016 (au lieu du 19 août 2016) pour décider. Ce délai supplémentaire a permis à la Couronne de mener des consultations plus poussées avec les groupes autochtones et de consulter le public, en plus d'évaluer les émissions de GES associées au projet. Il a été prévu dans le budget 2016 que le financement de participation des groupes autochtones serait accru, passant de 700 000 \$ à 2,2 millions de dollars.

#### ***Processus d'examen de l'Office national de l'énergie***

##### **Processus de consultation de l'Office**

En avril 2014, l'Office a émis l'ordonnance d'audience OH-001-2014 établissant le processus d'examen public du projet.

L'Office a reçu et examiné en tout 2 118 demandes de participation à l'audience OH-001-2014 sur le projet. L'Office a accordé le droit de participer à 1 650 personnes ayant présenté une demande. Sur ces 1 650 participants à l'audience, 400 ont pris part à titre d'intervenants, et les autres, à titre d'auteurs de commentaires. Les participants à l'audience provenaient de divers groupes ou secteurs, dont les suivants : gouvernements fédéral et provinciaux, milieu des affaires, autochtones, propriétaires fonciers, particuliers et organisations non gouvernementales.

En juillet 2013, l'Office a annoncé qu'il mettrait 1,5 million de dollars à la disposition des intervenants admissibles afin de leur permettre de participer à l'audience. Ce budget a par la suite été augmenté, et jusqu'à 3 085 370 \$ ont été alloués au total à 72 intervenants.

The Board relied on its Enhanced Indigenous Engagement initiative to ensure potentially impacted Indigenous groups have the opportunity to be heard. Through this initiative, 73 Indigenous groups<sup>1</sup> participated as intervenors into the hearing process, and 35 groups and individuals provided oral traditional evidence to the Board at sessions held in Edmonton, AB, in September 2014, Chilliwack, B.C., in October 2014, Kamloops and Victoria, B.C., in November 2014, and Calgary, AB, in January 2015.

#### Issues raised during NEB hearings

##### *Commercial parties*

The Project has strong support from 13 shippers (including Canadian Oil Sands, Cenovus, Devon, Husky Oil, Imperial Oil, Statoil, Suncor, Tesoro and Total) with firm commitments of approximately 112 300 m<sup>3</sup>/d (707 500 bbl/d) in long-term contracts of 15 or 20 years. The Canadian Association of Petroleum Producers, a major industry association, and the Explorers and Producers Association of Canada also support the Project. Both the Edmonton Chamber of Commerce and the British Columbia Chamber of Commerce said that the crude oil transmission infrastructure is used at full capacity and additional capacity is critically needed.

##### *Individuals and non-government organizations*

Of the approximately 400 intervenors and 1 250 commenters in the hearing process, many were individuals and non-government organizations who expressed strong opposition to the Project, citing the risk of a spill, downstream and upstream climate change impact and environmental effects. Some participants questioned the need for the Project, and submitted that investing in renewable energy would be a preferable option for Canada.

##### *Indigenous groups*

Seventy-three Indigenous groups (representing 83 Indigenous communities) participated as intervenors in the hearing and provided their comments, views and evidence through written submissions and oral evidence to the NEB. A total of 35 Indigenous groups and individuals provided oral traditional evidence to the Board during the hearing.

L'Office s'est appuyé sur son initiative d'amélioration de la participation autochtone pour faire en sorte que les groupes autochtones susceptibles d'être touchés aient la possibilité de se faire entendre. Dans ce cadre, 73 groupes autochtones<sup>1</sup> ont pris part au processus d'audience à titre d'intervenants, et 35 groupes et personnes ont fourni à l'Office une preuve traditionnelle orale aux séances tenues à Edmonton (Alb.) en septembre 2014, à Chilliwack (C.-B.) en octobre 2014, à Kamloops et à Victoria (C.-B.) en novembre 2014 et à Calgary (Alb.) en janvier 2015.

#### Questions soulevées au cours des audiences de l'Office

##### *Parties ayant des intérêts commerciaux*

Le projet est fortement soutenu par 13 transporteurs (dont Canadian Oil Sands, Cenovus, Devon, Husky Oil, Imperial Oil, Statoil, Suncor, Tesoro et Total) ayant des engagements fermes d'environ 112 300 m<sup>3</sup>/j (707 500 b/j) dans le cadre de contrats à long terme de 15 ou 20 ans. L'Association canadienne des producteurs pétroliers, une importante association industrielle, et la Explorers and Producers Association of Canada appuient aussi le projet. Les chambres de commerce d'Edmonton et de la Colombie-Britannique ont indiqué que l'infrastructure de transport du pétrole brut est utilisée au maximum de sa capacité et qu'une capacité supplémentaire est absolument essentielle.

##### *Particuliers et organisations non gouvernementales*

Plusieurs particuliers et organisations non gouvernementales étaient des quelque 400 intervenants et 1 250 auteurs de commentaires durant le processus d'audience qui ont exprimé leur vive opposition au projet, citant le risque de déversement, l'incidence sur le changement climatique des activités en amont et en aval associées au projet, et les effets sur l'environnement. Certains participants ont remis en question la nécessité du projet, et ont fait valoir qu'il serait préférable pour le Canada d'investir dans l'énergie renouvelable.

##### *Groupes autochtones*

Au total, 73 groupes autochtones (représentant 83 collectivités autochtones) ont participé à l'audience à titre d'intervenants pour faire part de leurs commentaires, de leurs points de vue et présenter leurs éléments de preuve, dans des mémoires et des témoignages. Au total, 35 groupes et personnes autochtones ont présenté à l'Office des éléments de preuve traditionnelle orale au cours du processus d'audience.

<sup>1</sup> National Energy Board Report: *National Energy Board Report – Trans Mountain Expansion Project – OH-001-2014*, May 2016, pp. 499–503.

<sup>1</sup> Rapport de l'Office national de l'énergie : *Rapport de l'Office national de l'énergie – Projet d'agrandissement du réseau de Trans Mountain – OH-001-2014*, mai 2016, p. 515-519.

Indigenous groups' overarching issues identified relate to the potential significant adverse impacts the Project could have on their asserted or established Aboriginal and treaty rights. These consist of the rights to hunt, to trap, to fish, to harvest, and to carry out traditional activities, including cultural and spiritual activities. In addition to these overarching concerns related to their asserted and established Aboriginal rights and title, other key Indigenous concerns pertain to the Project's potential effects on

- cultural heritage resources;
- community health;
- cumulative effects of development; and
- employment.

Indigenous groups also raised concerns about the potential adverse effects of the Project on the environment, which relates to fish and fish habitat, wildlife, vegetation, soils, water quality and quantity, and traditional land and marine resource use. With respect to impacts on traditional land and marine resource uses, practices and activities, some groups fear it could negatively impact their ability to continue their ancestral and traditional way of living through hunting, fishing, trapping and gathering of plants for subsistence or medicinal purposes. Many Indigenous groups expressed concerns over the Project's potential impacts related to spills and other health-related issues, including stress and reduced prenatal health and youth development.

In addition, several Indigenous groups are concerned by the cumulative impacts associated with accelerated resource development on their traditional lands. They noted that as industrial and commercial development unfolds at an accelerated pace through highways, roads, farming and resource development in general, their ability to exercise their Aboriginal and treaty rights could also be diminishing.

Regarding employment, many Indigenous groups expressed an interest in employment and procurement opportunities as well as assistance with training to provide required skills. Some groups would like to participate in monitoring activities, and requested that community members or Elders be present during construction and involved in reclamation work to ensure mitigation measures are completed.

Les questions fondamentales soulevées par les autochtones concernent les effets négatifs importants possibles du projet sur leurs droits ancestraux ou issus de traités, établis ou revendiqués, c'est-à-dire leurs droits de chasse, de piégeage, de pêche, de récolte et leurs droits d'exécuter des activités traditionnelles, y compris culturelles et spirituelles. Outre ces questions fondamentales touchant leur titre et leurs droits ancestraux établis ou revendiqués, les autres préoccupations importantes des groupes autochtones portaient sur d'éventuelles répercussions du projet à l'égard de ce qui suit :

- les ressources du patrimoine culturel;
- la santé communautaire;
- les effets cumulatifs du développement;
- l'emploi.

Les groupes autochtones ont également dit avoir des inquiétudes quant aux effets négatifs potentiels du projet sur l'environnement, le poisson et son habitat, la faune, la végétation, les sols, la quantité et la qualité de l'eau et les usages traditionnels des terres et des ressources marines. En ce qui a trait aux usages, pratiques et activités traditionnels relatifs aux terres et aux ressources marines, certains groupes craignent que le projet ait des effets qui nuisent à leur capacité de conserver leur mode de vie ancestral et traditionnel, c'est-à-dire à leurs activités de chasse, de pêche, de piégeage et de récolte de plantes à des fins médicinales ou de subsistance. Beaucoup de groupes autochtones sont préoccupés par les répercussions éventuelles du projet liées aux déversements, et par d'autres problèmes de santé comme le stress, une moins bonne santé prénatale et les effets sur le développement des jeunes.

Plusieurs groupes autochtones ont également soulevé le problème des effets cumulatifs de la mise en valeur accélérée des ressources sur leurs terres traditionnelles. Ils ont observé qu'avec l'accélération du développement industriel et commercial — autoroutes, routes, exploitation agricole et mise en valeur des ressources en général — leur capacité à exercer leurs droits ancestraux et issus de traités pourrait diminuer.

Sur la question de l'emploi, un grand nombre de groupes autochtones ont déclaré être intéressés par les possibilités d'emploi et d'approvisionnement, et par une aide à la formation visant à leur fournir les compétences requises. Certains groupes ont indiqué qu'ils aimeraient participer aux activités de surveillance et ont demandé que des membres de la collectivité ou des aînés soient présents durant la construction et participent aux travaux de remise en état pour s'assurer de la mise en œuvre complète des mesures d'atténuation.

**Government interventions**

***Environment and Climate Change Canada (ECCC)***

ECCC participated in the NEB review process as an intervenor and filed written evidence to inform the Board's decision on various subject matters, including species at risk, migratory birds, wetlands, air quality, environmental emergencies, disposal at sea, meteorology and climate change. As one of the federal departments responsible for the implementation and management of the *Species at Risk Act* (SARA), i.e. those extirpated, endangered or threatened species that are listed on Schedule 1 of the SARA, ECCC advised the NEB on the Project's potential adverse impacts on 70 species at risk and their critical habitat likely to be found along the Project route, including the southern mountain woodland caribou and grizzly bear.<sup>2</sup>

***Department of Fisheries and Oceans (DFO)***

DFO was an Intervenor and Federal Authority in the EA for the Project, providing technical expertise and information related to marine fish and fish habitat, and marine mammals (including marine species at risk) to the NEB.

The evidence before the Board suggests that Burrard Inlet, the area where the expansion of the WMT would occur, is a productive marine environment, supporting a diverse assemblage of algae, invertebrates (more than 100 species), and marine fish (more than 75 species), including three SARA-listed marine fish species of special concern: Bluntnose sixgill shark, Green sturgeon, and Yelloweye rockfish (inside waters population).

Trans Mountain and DFO agree that Burrard Inlet has been cumulatively impacted by industrial and urban development, as it used to be historically one of Canada's most productive marine fish habitats. For the construction and operation of the marine terminal, DFO is of the opinion that with the implementation of appropriate mitigation measures, effects on marine mammals and fisheries are unlikely. Should the Project proceed to the regulatory phase, DFO will require additional detailed information to support its review under the *Fisheries Act*. Condition 109 requires Trans Mountain to provide a copy of the *Fisheries Act* authorization for the marine terminal prior to commencing operations. DFO also recommended that Trans Mountain develop a follow-up monitoring

***Interventions du gouvernement***

***Environnement et Changement climatique Canada (ECCC)***

ECCC a pris part au processus d'examen à titre d'intervenant et déposé une preuve écrite pour éclairer les décisions de l'Office sur différents sujets, notamment les espèces en péril, les oiseaux migrateurs, les terres humides, la qualité de l'air, les urgences environnementales, l'élimination en mer, la météorologie et le changement climatique. Faisant partie des ministères fédéraux responsables de la mise en application et de la gestion de la *Loi sur les espèces en péril* (LEP), c'est-à-dire des espèces disparues du pays, en voie de disparition ou menacées inscrites à l'annexe 1 de la LEP, ECCC a informé l'Office des effets négatifs possibles du projet sur 70 espèces en péril inscrites à l'annexe 1 de la LEP et sur leur habitat essentiel susceptible de se trouver le long du tracé du projet, dont le caribou des bois des montagnes du Sud et l'ours grizzli<sup>2</sup>.

***Ministère des Pêches et des Océans (MPO)***

Le MPO, intervenant et autorité fédérale dans l'EE du projet, a fourni à l'Office des connaissances et des informations de nature technique en rapport avec les poissons marins, leurs habitats et les mammifères marins (y compris les espèces aquatiques en péril).

Les éléments de preuve soumis à l'Office suggèrent que la baie Burrard, zone de l'agrandissement envisagé du TMW, est un milieu marin productif où vit un assemblage diversifié d'algues, d'invertébrés (plus d'une centaine d'espèces) et de poissons marins (plus de 75 espèces), dont trois espèces préoccupantes inscrites à la LEP : le requin gris, l'esturgeon vert et le sébaste aux yeux jaunes (population des eaux intérieures).

Trans Mountain et le MPO conviennent que les effets cumulatifs du développement industriel et urbain se font sentir à la baie Burrard, qui était auparavant l'un des habitats des poissons marins les plus productifs au Canada. Le MPO est d'avis qu'il est peu probable que la construction et l'exploitation du terminal maritime aient des effets sur les mammifères marins et les pêches avec la mise en œuvre de mesures d'atténuation appropriées. Si le projet devait passer à la phase réglementaire, le MPO demandera d'autres renseignements précis pour procéder à son examen en vertu de la *Loi sur les pêches*. La condition 109 exige que Trans Mountain fournit, pour le terminal maritime, une copie de l'autorisation aux fins de la *Loi sur les pêches* avant le début de l'exploitation. Le MPO a

<sup>2</sup> For detailed information on ECCC's assessment regarding other subject matters, see the NEB Report entitled *National Energy Board Report – Trans Mountain Expansion Project – OH-001-2014*, dated May 2016.

<sup>2</sup> Pour en savoir plus sur l'évaluation d'ECCC portant sur d'autres sujets, veuillez vous reporter au rapport de l'Office de mai 2016 intitulé *Rapport de l'Office national de l'énergie Rapport – Projet d'agrandissement du réseau de Trans Mountain – OH-001-2014*.

program to assess the effectiveness and adequacy of its mitigating measures for the marine terminal.

Participants in the NEB hearing also noted that the Southern resident killer whale is listed as endangered under the SARA. The NEB found that the operation of Project-related marine vessels is likely to result in significant adverse effects to the Southern resident killer whale, an endangered species under the SARA, and on Indigenous cultural uses of the Southern resident killer whale. The NEB report recommended the Government take actions to reduce the potential effects of vessels on this species.

#### *Health Canada (HC)*

HC participated in the NEB review of the Project as a Commenter and submitted a Letter of Comment providing expert views on various subject matters, including air quality, drinking and recreational water quality, noise, contamination of country foods, and human health.

HC indicated that, overall, there is a low likelihood for acute and chronic health effects due to Project-related air emissions and that potential effects on drinking and recreational water during normal operation would be low. However, HC subjects such a conclusion to the effective implementation of spill control measures to limit the dispersion of crude oil into drinking water sources and recreational waters.

HC is of the view that there would be few Project-related effects due to contamination of country foods consumed by Indigenous residents, urban dwellers and area users in the vicinity of the Burnaby Terminal and the WMT during normal operations of these facilities. Impacts associated with major crude oil spills in terms of contamination of, access to, and availability of terrestrial and marine country foods for Indigenous communities could be high; however, the Board found the risk of such a spill occurring was low. In addition, the Board noted that air emissions monitoring would serve as a valuable tool in verifying and validating the results of any air dispersion modelling and imposed six conditions on Trans Mountain to address concerns raised by several participants, including HC.<sup>3</sup>

également recommandé que Trans Mountain élabore un programme de suivi et de surveillance afin d'évaluer l'efficacité et le caractère adéquat de ses mesures d'atténuation visant le terminal maritime.

Les participants à l'audience de l'Office ont également observé que l'épaulard résident du sud est inscrit sur la liste des espèces en péril aux fins de la LEP. L'Office a conclu que l'exploitation des navires liés au projet aura probablement des effets négatifs importants sur cette espèce et sur les usages culturels qu'en font les autochtones. Dans son rapport, l'Office a recommandé que le gouvernement prenne des mesures pour réduire les effets possibles des navires sur cette espèce.

#### *Santé Canada (SC)*

Santé Canada a participé à l'examen mené par l'Office à l'égard du projet comme auteur de commentaires et a soumis une lettre de commentaires fournissant des avis spécialisés sur divers sujets tels que la qualité de l'air, de l'eau potable et des eaux utilisées à des fins récréatives, le bruit, la contamination des aliments traditionnels et la santé humaine.

SC a indiqué que, dans l'ensemble, il est peu probable que les émissions atmosphériques attribuables au projet aient des conséquences aiguës et chroniques pour la santé, et que les effets éventuels sur la qualité de l'eau potable et des eaux utilisées à des fins récréatives seraient faibles dans des conditions d'exploitation normales. Toutefois, SC émet cette conclusion sous réserve de la mise en œuvre efficace des mesures de contrôle des déversements visant à limiter la dispersion de pétrole brut dans les sources d'eau potable et les eaux utilisées à des fins récréatives.

Selon SC, le projet aurait peu d'effets attribuables à la contamination d'aliments traditionnels consommés par les populations autochtones, les populations urbaines et les utilisateurs à proximité des terminaux de Burnaby et du TMW dans des conditions d'exploitation normales de ces installations. Les effets associés à des déversements importants de pétrole brut, qu'il s'agisse de la contamination, de l'accès des collectivités autochtones aux aliments traditionnels terrestres et marins, et de leur disponibilité, pourraient être élevés. L'Office a toutefois jugé que le risque qu'un déversement survienne était faible. Il a également noté que la surveillance des émissions atmosphériques constituerait un outil précieux pour vérifier et valider les résultats de toute modélisation de la dispersion dans l'air, et a imposé six conditions à Trans Mountain pour aborder les préoccupations soulevées par plusieurs participants, y compris SC<sup>3</sup>.

<sup>3</sup> These include Condition # 52, Condition # 53, Condition # 54, Condition # 55, Condition # 79 and Condition # 137.

<sup>3</sup> Les conditions 52, 53, 54, 55, 79 et 137.

***Other participating federal departments and organizations***

Other federal departments and organizations that participated included Transport Canada (TC), Natural Resources Canada (NRCan), Indigenous and Northern Affairs, Parks Canada Agency, and Port Metro Vancouver.

***NEB assessment and conclusions***

**Socio-economic impacts**

In assessing the socio-economic impacts of the Project, the Board considered (1) market access for Canadian oil; (2) job creation through construction and operation of the pipeline; (3) ability for local and Indigenous individuals, communities and business to develop; (4) direct economic benefits stemming from spending on pipeline materials and income revenues; and (5) tax revenues received by municipal, provincial and federal governments.

The Board found that increasing pipeline capacity to improve access to Pacific Basin markets would significantly benefit the Canadian economy, and that the economic benefits of the Project could be regionally and nationally distributed. The Board was satisfied that the 13 shippers' firm and long-term (15 to 20 years) contracts provide a clear demonstration of the strong business support for the Project.

Trans Mountain estimated that the Project would inject \$6.8 billion in capital expenditures into the Canadian economy and could provide total producer benefits of \$73.5 billion due to improved market access, and that federal and provincial benefits from direct operations of the pipeline could be \$23.7 billion, excluding benefits stemming from activities such as extraction, domestic processing, and exports to foreign markets.

The proponent further estimated that the Project would generate direct and indirect employment in Canada. The construction of the pipeline could generate 400 to 600 workers per spread during the construction phase. New tanks and WMT construction is expected to add between 150 and 465 workers. Trans Mountain estimated that the Project operations over the first 20 years could create 440 jobs per year, of which 313 would be in British Columbia. Indigenous groups are expected to take advantage of mutual benefit agreements signed with the Project proponent, along with provisions for Indigenous employment, training and procurement opportunities. Furthermore, it is also expected to bring modest benefits to local communities along the pipeline and contribute to improving local emergency response capacity, improving

***Autres ministères fédéraux et organisations participants***

D'autres ministères fédéraux et organisations ont participé, dont Transports Canada (TC), Ressources naturelles Canada (RNCan), Affaires autochtones et du Nord Canada, l'Agence Parcs Canada et le Port de Vancouver.

***Évaluation et conclusions de l'Office***

**Répercussions socioéconomiques**

Dans son évaluation des répercussions socioéconomiques du projet, l'Office a tenu compte des facteurs suivants : (1) l'accès du pétrole canadien aux marchés; (2) la création d'emplois liés à la construction et à l'exploitation du pipeline; (3) les possibilités de développement locales pour les personnes, les collectivités et les entreprises autochtones et non autochtones; (4) les retombées économiques provenant directement des dépenses en matériaux pour le pipeline et des revenus; (5) les recettes fiscales perçues par les gouvernements provinciaux et fédéral, et les municipalités.

L'Office a constaté qu'augmenter la capacité pipelinière pour améliorer l'accès aux marchés du bassin du Pacifique profiterait considérablement à l'économie du Canada, et que les retombées économiques du projet pourraient être distribuées à l'échelle régionale et nationale. L'Office a été convaincu que les contrats fermes et à long terme (15 à 20 ans) avec 13 transporteurs sont une démonstration claire du soutien solide du milieu des affaires au projet.

Trans Mountain a estimé que le projet injecterait 6,8 milliards de dollars dans l'économie canadienne en dépenses en capital, et représenterait, pour les producteurs, des retombées totales de 73,5 milliards de dollars grâce à l'amélioration de l'accès aux marchés. Il a également estimé que les retombées fédérales et provinciales de l'exploitation directe du pipeline pourraient atteindre 23,7 milliards de dollars, sans compter celles découlant d'activités telles que l'extraction et la transformation effectuée au Canada et les exportations vers des marchés étrangers.

Le promoteur a également estimé que le projet créerait des emplois directs et indirects au Canada. Le pipeline pourrait exiger entre 400 et 600 travailleurs par tronçon à l'étape de la construction, et la construction des nouveaux réservoirs et du TMW devraient exiger en plus entre 150 et 465 travailleurs. Trans Mountain a évalué à 440 le nombre d'emplois requis par an pour l'exploitation du projet pendant les 20 premières années, dont 313 seraient en Colombie-Britannique. On prévoit que les groupes autochtones profiteront d'ententes d'intérêt mutuel conclues avec le promoteur du projet, et des dispositions sur les possibilités, pour les autochtones, concernant l'emploi, la formation et l'approvisionnement. On s'attend aussi à ce que le projet produise de modestes retombées pour les collectivités situées le long du pipeline, et à ce qu'il

community parks and infrastructure, and developing environmental stewardship programs.

### Environmental impacts

The Board assessed the environmental impacts of the Project under both the NEB Act and CEAA, 2012. The EA under CEAA, 2012 assessed (i) the physical works and activities making up the Project; (ii) the biophysical and socio-economic elements defined in section 5 of CEAA, 2012 that are likely to be affected by the Project; and (iii) the factors that must be taken into account in conducting an EA under section 19 of the CEAA, 2012. These include matters related to physical environment and soils, including water quality and quantity, fish and fish habitat, wetlands, wildlife and wildlife habitat, species at risk under the SARA, atmospheric and acoustic environment, heritage resources, traditional land and resource use, navigation and navigation safety. Even though Project-related marine shipping activities are not part of the Project, and are not regulated by the NEB, the Board considered the potential effects of increased marine shipping activities as part of its overall public interest determination under the NEB Act. However, the Board did not consider potential effects associated with other operation activities occurring upstream and downstream of the Project, including oil sands development and operations.

The Board finds that with the implementation of Trans Mountain's proposed environmental protection procedures and mitigation measures, and the Board's recommended conditions, pursuant to its authority under the CEAA, 2012, the Project is not likely to cause significant adverse environmental effects. However, under the NEB Act, the Board is of the view that the operation of Project-related marine vessels would contribute to the total cumulative effects on the Southern resident killer whales, and would further impede the recovery of the Southern resident killer whale population, an endangered species that lives in the Salish Sea. As a result, the operation of Project-related marine vessels would likely result in significant adverse effects to the Southern resident killer whale, and on Aboriginal cultural uses associated with these marine mammals.

The Board noted that marine shipping is beyond its regulatory authority and it does not have the ability to impose specific mitigation conditions to address environmental effects of Project-related marine shipping, including those to mitigate effects on the Southern resident killer whale. As a result, the Board encouraged other regulatory authorities, such as TC and DFO, to explore initiatives that would aim to reduce the potential effects of marine vessels on marine mammals. In addition, Trans Mountain

contribue au renforcement de la capacité d'intervention d'urgence, à l'amélioration des parcs et de l'infrastructure communautaire et à la création de programmes de gestion environnementale.

### Répercussions environnementales

L'Office a évalué les répercussions environnementales du projet au regard de la Loi sur l'Office et de la LCEE (2012). L'évaluation environnementale a porté sur ce qui suit : (1) les ouvrages et activités qui constituent le projet; (2) les éléments biophysiques et socioéconomiques définis à l'article 5 de la LCEE (2012) qui seront probablement touchés par le projet; et (3) les facteurs à prendre en compte dans la réalisation d'une évaluation environnementale visée à l'article 19 de la LCEE (2012). Cela englobe des questions liées au milieu physique et aux sols, dont les suivantes : quantité et qualité de l'eau, poisson et habitat du poisson, terres humides, faune et habitat faunique, espèces en péril aux fins de la LEP, environnement atmosphérique et acoustique, ressources patrimoniales, usages traditionnels des terres et des ressources, navigation et sécurité de la navigation. Même si les activités de transport maritime liées au projet ne font pas partie du projet en tant que tel et de ce fait, ne sont pas réglementées par l'Office, celui-ci a pris en compte les effets potentiels d'une augmentation du transport maritime dans sa détermination globale de l'intérêt public au regard de la Loi sur l'Office. Toutefois, il n'a pas évalué les effets potentiels associés aux activités d'exploitation en amont et en aval du projet, y compris ceux des activités de mise en valeur et d'exploitation des sables bitumineux.

L'Office a conclu qu'avec la mise en application des procédures de protection environnementales et des mesures d'atténuation proposées par Trans Mountain, et des conditions que l'Office a recommandées en vertu des pouvoirs qui lui sont conférés par la LCEE (2012), le projet n'est pas susceptible d'entraîner des effets environnementaux négatifs importants. L'Office estime toutefois que l'exploitation des navires liés au projet contribuerait aux effets cumulatifs totaux sur les épaulards résidents du sud et nuirait également au rétablissement de la population de cette espèce en voie de disparition qui vit dans la mer des Salish. Par conséquent, l'exploitation des navires liés au projet serait susceptible d'entraîner des effets environnementaux négatifs importants sur les épaulards résidents du sud, ainsi que sur les usages culturels que font les autochtones de ces mammifères marins.

L'Office a observé que le transport maritime dépasse le cadre de ses pouvoirs de réglementation et qu'il n'est pas habilité à imposer des conditions d'atténuation particulières pour tenir compte des effets du transport maritime lié au projet sur l'environnement, notamment sur l'épaulard résident du sud. C'est pourquoi l'Office a invité d'autres organismes de réglementation comme TC et le MPO à examiner des solutions permettant de réduire les effets possibles des navires sur les mammifères marins.

committed to a series of actions supporting the recovery of the Southern resident killer whale. For example, as part of its Marine Mammal Protection Program, Trans Mountain has committed to supporting the objectives and recovery measures identified in the Action Plan for the species.

In addition to Trans Mountain's proposed mitigating measures for the Project-related environmental effects, the Board would impose on Trans Mountain 45 terms and conditions through the Project Certificate aimed at specifically addressing environmental issues raised by hearing participants (intervenors and commenters) and the Board. These conditions relate to air quality (6 conditions); GHG emissions (2); surface water quality and quantity (5); freshwater fish and fish habitat (5); soil and soil productivity (10); rare plants and lichens and vegetation (9); forest (1); weeds (2); terrestrial wildlife and wildlife habitat (9); woodland caribou (4); grizzly bear (2); other species at risk (3); parks and protected areas (8); marine sediments and water quality (1); marine fish and fish habitat (2); marine mammals (1); accidents and malfunctions (2).

The proposed Project would cross each of the Wells Gray and Groundhog subpopulations and the Mount Robson local population of southern mountain caribou. The proposed Hinton to Hargreaves pipeline reactivation segment would cross the South Jasper caribou range. These woodland caribou are listed as Threatened under Schedule 1 of the SARA. The Board agrees with ECCC's recommendation that destruction of woodland caribou critical habitat should be avoided. The Board would impose Condition # 36 requiring Trans Mountain to file a Pre-Construction Caribou Habitat Assessment for each caribou range potentially affected by the Project that would describe the type of habitat characterized by biophysical attributes of critical habitat, as defined in the Southern Mountain Caribou Recovery Strategy.

With respect to protecting grizzly bear critical habitat, the Board notes that Trans Mountain's proposed pipeline corridor does not avoid the North Cascades Grizzly Bear Population Unit due to potential effects on another threatened grizzly bear population unit. Nevertheless, the Board accepts Trans Mountain's intent to route the pipeline adjacent to existing disturbance for most of the pipeline corridor length in the North Cascades Grizzly Bear Population Unit. As a result, the Board would impose Condition # 47 and Condition # 56. Condition # 47 requires Trans Mountain to file an Access Management Plan that would include monitoring for effectiveness of access control measures and adaptive management measures, if needed, based on monitoring results. Condition # 56 requires Trans Mountain to file Grizzly Bear Mitigation

De plus, Trans Mountain s'est engagée à prendre une série de mesures à l'appui de cette espèce. Par exemple, dans le cadre de son Programme de protection des mammifères marins, la société s'est engagée à appuyer les objectifs et les mesures de rétablissement définis dans le Plan d'action pour l'épaulard résident.

Outre les mesures proposées par Trans Mountain pour atténuer les effets environnementaux du projet, l'Office assujettirait la délivrance du certificat à 45 conditions visant précisément à prendre en compte les préoccupations soulevées par les participants à l'audience au sujet de l'environnement (intervenants et auteurs de commentaires) et par l'Office. Ces conditions concernent ce qui suit : qualité de l'air (6 conditions); émissions de GES (2); quantité et qualité des eaux de surface (5); poissons d'eau douce et leur habitat (5); sol et productivité du sol (10); plantes et lichens rares, et communautés végétales (9); forêt (1); mauvaises herbes (2); faune terrestre et son habitat (9); caribou des bois (4); ours grizzli (2); autres espèces en péril (3); parcs et aires protégées (8); sédiments marins et qualité de l'eau (1); poissons marins et leur habitat (2); mammifères marins (1); accidents et défaillances (2).

Le projet traverserait chacune des sous-populations Wells Gray et Groundhog et la population locale du mont Robson des caribous des montagnes du Sud. Le tronçon de Hinton à Hargreaves dont la remise en service est proposée traverserait l'aire de répartition du caribou au sud de Jasper. Ces caribous des bois figurent à l'annexe I de la LEP parmi les espèces menacées. L'Office est d'accord avec la recommandation d'ECCC que la destruction de l'habitat essentiel du caribou des bois doit être évitée. L'Office imposerait la condition 36 exigeant de Trans Mountain qu'elle dépose une évaluation de l'habitat du caribou préalable à la construction pour chacune des aires de répartition du caribou susceptibles d'être touchées par le projet. L'évaluation décrirait le type d'habitat présentant les caractéristiques biophysiques de l'habitat essentiel de cette espèce, telles qu'elles sont définies dans le Programme de rétablissement du caribou des montagnes du Sud.

Sur la question de la protection de l'habitat essentiel de l'ours grizzli, l'Office remarque que le corridor pipelinier proposé par Trans Mountain n'évite pas l'unité démographique du nord des Cascades en raison des effets que cet évitement pourrait avoir sur une autre unité démographique d'ours grizzlis menacée. Néanmoins, l'Office reconnaît que Trans Mountain a l'intention d'adopter un tracé adjacent aux perturbations actuelles sur la plus grande partie du corridor pipelinier dans l'unité démographique du nord des Cascades. Par conséquent, l'Office imposerait les conditions 47 et 56. La condition 47 exige de Trans Mountain qu'elle dépose un plan de gestion de l'accès prévoyant la surveillance de l'efficacité des mesures de restriction de l'accès, ainsi que des mesures de gestion adaptative, si les résultats de la surveillance indiquent

Plans for each vulnerable grizzly bear population unit/grizzly bear management area. As part of these plans, Trans Mountain would be required to monitor the effectiveness of mitigation measures, apply corrective measures as needed, and report on monitoring results in post-construction monitoring reports.

The Board assessed the direct GHG emissions from the Project and its related marine vessel traffic. It concluded that the direct GHG emissions from the Project construction, without any additional Board imposed mitigation conditions, would have been substantial — over 1 million tonnes of carbon dioxide ( $\text{CO}_2$ ) equivalent. To help mitigate this impact, the Board included a condition requiring Trans Mountain to develop an offset plan for the Project's entire direct construction-related GHG emissions determined post-construction. Annual project emissions are estimated to be 407 000 tonnes of  $\text{CO}_2$  equivalent per year.

Although emissions from Project-related marine vessels would be a small percentage relative to Canadian GHG emissions, given that there are no regulatory reporting thresholds or specific requirements for marine GHG emissions in Canada, the Board found that GHG emissions from Project-related marine vessels would likely be significant. While the NEB does not regulate marine shipping, the NEB imposed conditions to mitigate the impacts related to these findings.

#### Impacts on Indigenous groups

Both social and environmental issues raised by Indigenous groups were considered and addressed through the NEB review process. The 157 conditions recommended by the NEB will require Trans Mountain to implement all commitments it made through the review process, and further implement mitigation measures for impacts that might otherwise occur to people and the environment, including in relation to air quality and greenhouse gases; water quality; soil, vegetation and wetlands; wildlife and wildlife habitat; fish and fish habitat; and marine mammals. Several of the conditions specifically address Aboriginal interests, such as requiring the proponent to continue reporting on the availability and findings of traditional use studies, hiring of Aboriginal monitors during construction, and ongoing filing of Aboriginal engagement reports. There are also specific conditions tied to concerns by the Coldwater Indian Band and Stó:lō Collective.

qu'elles sont nécessaires. La condition 56 exige de Trans Mountain qu'elle dépose un plan d'atténuation pour chacune des unités démographiques d'ours grizzlis vulnérables ou aires de gestion des ours grizzlis vulnérables. Dans le cadre de ces plans, Trans Mountain serait tenue de surveiller l'efficacité des mesures d'atténuation, d'appliquer des mesures correctives s'il y a lieu et de faire état des résultats de la surveillance dans les rapports de la surveillance post-construction.

L'Office a évalué les émissions de GES provenant directement du projet et du trafic maritime connexe. Il a conclu que les émissions directes de GES attribuables à la construction du projet, en l'absence de condition imposée par l'Office auraient été importantes — plus de 1 million de tonnes d'équivalent de dioxyde de carbone ( $\text{CO}_2$  éq.). Pour contribuer à atténuer cet effet, l'Office a ajouté une condition exigeant que Trans Mountain élabore un plan de compensation pour toutes les émissions directes de GES liées à la construction du projet en fonction de la détermination post-construction. Les estimations des émissions liées au projet sont de 407 000 tonnes de  $\text{CO}_2$  éq. par an.

Même si les émissions produites par les navires liés au projet ne représentaient qu'un petit pourcentage des émissions de GES au Canada, comme il n'y a pas de seuils de déclaration réglementaires ou d'exigences particulières pour les émissions de GES en mer au Canada, l'Office a conclu que les émissions de GES provenant des navires liés au projet seraient probablement importantes. Bien qu'il ne réglemente pas le transport maritime, l'Office a imposé des conditions en vue d'atténuer les effets mentionnés dans ces conclusions.

#### Répercussions pour les groupes autochtones

Les enjeux sociaux et environnementaux mentionnés par les groupes autochtones ont été examinés et pris en compte dans le cadre du processus d'examen de l'Office. Les 157 conditions recommandées par l'Office exigeront de Trans Mountain qu'elle mette en œuvre tous les engagements qu'elle a pris tout au long du processus, et qu'elle applique en plus les mesures pour atténuer les autres répercussions éventuelles sur les personnes et l'environnement, y compris en ce qui concerne la qualité de l'air et les GES; la qualité de l'eau; le sol, la végétation et les terres humides; la faune et son habitat; le poisson et son habitat; et les mammifères marins. Plusieurs conditions portent spécifiquement sur les intérêts autochtones comme celle imposée de continuer de rendre compte de la disponibilité et des résultats des études sur les usages traditionnels, le recrutement de surveillants autochtones au cours de la construction, et le dépôt régulier de rapports relatifs à la consultation des autochtones. Des conditions particulières sont également prévues pour tenir compte des préoccupations soulevées par la bande Coldwater et le collectif Stó:lō.

With respect to rights associated with subsection 35(1) of the *Constitution Act, 1982*, the Board concluded that, having considered all the evidence submitted in this proceeding, the consultation undertaken with Aboriginal groups, the impacts on Aboriginal interests, the proposed mitigation measures, including conditions, to minimize adverse impacts on Aboriginal interests, and Board imposed requirements for ongoing consultation, it was satisfied that the Board's recommendation and decisions with respect to the Project are consistent with subsection 35(1) of the *Constitution Act, 1982*.

#### **Impacts on landowners**

More than 89 percent of the pipeline route for the Project parallels existing disturbances, including the right-of-way for Trans Mountain's existing pipeline. The new pipeline will parallel the existing Trans Mountain pipeline for 73 percent of its total length, and other existing disturbances for 16 percent. The Project will cross provincial Crown lands (25.71 percent), private lands (73.5 percent), and Indigenous lands (0.8 percent).

The Collaborative Group of Landowners Affected by Pipelines and Metro Vancouver expressed concerns with the methodology Trans Mountain used for establishing market value for the purpose of determining the value of land rights acquired for the Project. In response to these concerns, Trans Mountain said that, based on research undertaken by accredited appraisers, B.C. Assessment valuations had been used as a basis for residential properties but values included an uplift to address any undervaluation that existed.

The NEB approved the Project routing, as it found Trans Mountain's route selection process, route selection criteria, and level of detail for its alternative means assessment appropriate.

For any outstanding land matters, the NEB Act includes provisions (sections 85 to 103) to deal with land acquisition. Should there be a dispute between Trans Mountain and landowners, the NEB Act provides mechanisms for dispute resolution.

#### **NEB approval**

On May 19, 2016, the NEB found that the Project is in the public interest and recommended that the Certificate be issued under section 52 of the NEB Act for the construction and operation of the Project. The Certificate would be subject to 157 terms and conditions that the Board considers necessary or desirable in the public interest, if the Governor in Council were to direct the Board to issue the Certificate. If Trans Mountain does not proceed with the construction of the Project, the sunset clause provides that the Certificate shall expire five years from the date of

En ce qui a trait aux droits visés au paragraphe 35(1) de la *Loi constitutionnelle de 1982*, après examen de tous les éléments de preuve présentés dans le cadre du processus, de la consultation menée avec les groupes autochtones, des effets sur les intérêts autochtones, des mesures d'atténuation proposées et des conditions imposées pour minimiser les effets négatifs sur les intérêts autochtones, et des exigences de l'Office relatives à la consultation continue, l'Office a conclu qu'il était convaincu que la recommandation et les décisions de l'Office relativement au projet respectent le paragraphe 35(1) de *Loi constitutionnelle de 1982*.

#### **Répercussions sur les propriétaires fonciers**

Plus de 89 % du tracé prévu du projet suit des perturbations existantes, ce qui inclut l'emprise du pipeline actuel de Trans Mountain. Le nouveau pipeline sera parallèle au tracé du pipeline actuel de Trans Mountain sur 73 % de sa longueur totale, et suivra d'autres perturbations existantes sur 16 % de sa longueur. Le projet traversera des terres de la Couronne (25,71 %), des terres privées (73,5 %) et des terres autochtones (0,8 %).

Le Collaborative Group of Landowners Affected by Pipelines et la Région métropolitaine de Vancouver ont exprimé des préoccupations quant à la méthode employée par Trans Mountain pour déterminer la valeur marchande des droits fonciers acquis pour les besoins du projet. En réponse à ces préoccupations, Trans Mountain a déclaré que, compte tenu des recherches effectuées par des évaluateurs agréés, l'évaluation des terrains résidentiels s'est basée sur celles de B.C. Assessment, mais les valeurs ont inclus un rajustement pour tenir compte de toute sous-évaluation.

L'Office a approuvé le tracé du projet, et a trouvé que les mécanismes et les critères de sélection du tracé par Trans Mountain, et le niveau de détail de son évaluation des routes alternatives étaient appropriés.

Pour toute autre question foncière, la Loi sur l'Office contient des dispositions (articles 85 à 103) traitant de l'acquisition de terres. En cas de litige entre Trans Mountain et les propriétaires fonciers, la Loi sur l'Office prévoit des mécanismes de règlement des différends.

#### **Approbation de l'Office**

Le 19 mai 2016, l'Office a conclu que le projet est dans l'intérêt public et a recommandé qu'un certificat soit délivré en vertu de l'article 52 de la Loi sur l'Office pour la construction et l'exploitation du projet. Le certificat serait assujetti à 157 conditions jugées souhaitables ou nécessaires par l'Office dans l'intérêt public si le gouverneur en conseil devait charger l'Office de le délivrer. Si Trans Mountain ne procède pas à la construction du projet, la disposition de temporisation prévoit l'expiration du certificat cinq ans après la date de délivrance du certificat, à

the Certificate, unless construction in respect of section 52 facilities has commenced by that date (Condition # 5).

Pursuant to section 29 of CEAA, 2012, the Report also states that the Board is of the view that with the implementation of Trans Mountain's environmental protection procedures, and full compliance with the Board's recommended terms and conditions, the Project is not likely to cause significant adverse environmental effects. The Report includes the Board's recommended follow-up program to be implemented in respect of the Project.

#### ***Interim strategy and measures for project reviews***

In January 2016, the Government announced an interim strategy to guide its decisions on major projects pending the outcome of the ongoing reviews of Canada's environmental assessment and regulatory processes. Under this approach, the Government articulated a commitment to enhance Indigenous and public consultations as well as an assessment of upstream GHG emissions to inform its decision on projects. To support these activities, the Governor in Council extended its timelines by four months to enable robust engagement. Below is a summary of these activities.

#### ***Public consultation***

In line with the Government's Interim Strategy for assessing major energy projects, the Minister of Natural Resources set up a three-member Ministerial Panel (the Panel) for the Project in May 2016. The Panel's mandate was to solicit public input to inform the Government's decision on the Project and at the same time provide an opportunity for interested individuals and groups that did not obtain intervenor status during the NEB hearing to share their views. The Panel had to (i) review and consider input from the public; (ii) meet with local stakeholder representatives to engage the public and impacted communities along the pipeline and shipping route; (iii) meet with Indigenous groups that wished to share their views with the Panel, noting that the Panel's work will complement, not substitute, the Crown consultations; and (iv) submit a report to the Minister of Natural Resources no later than November 1, 2016.

In July and August 2016 the panel held 44 meetings in AB and B.C. attended by 2 400 people and 650 participants made direct presentations to the Panel. The Panel also received 20 154 email submissions from individuals and non-governmental organizations (NGOs), the majority of which were critical of the Project, citing First Nations rights, climate change, other environmental impacts and the need to transition to renewable energy. The Minister

moins que la construction des installations ayant fait l'objet d'une demande en vertu de l'article 52 n'ait commencé à cette date (condition 5).

Conformément à l'article 29 de la LCEE (2012), avec la mise en œuvre des procédures de protection environnementale par Trans Mountain et le plein respect des conditions qu'il a recommandées dans son rapport, l'Office a estimé que le projet n'est pas susceptible d'entraîner des effets environnementaux négatifs importants. Le rapport comprend le programme de suivi recommandé par l'Office à appliquer à l'égard du projet.

#### ***Stratégie et mesures provisoires pour les examens de projets***

En janvier 2016, le gouvernement a annoncé une Stratégie provisoire précisant la manière dont il prendrait en considération les grands projets en attente du résultat des examens en cours des processus d'évaluation environnementale et réglementaire au Canada. Dans le cadre de cette approche, le gouvernement s'est engagé à l'égard de consultations améliorées avec les autochtones et le public et a évalué les émissions de GES en amont afin de contribuer à éclairer ses décisions sur les projets. Pour faciliter ces activités, le gouverneur en conseil a prolongé de quatre mois ses délais afin de permettre de bonnes consultations. Ces activités sont résumées ci-dessous.

#### ***Consultation publique***

Aux fins de la Stratégie provisoire adoptée par le gouvernement pour l'évaluation des grands projets énergétiques, le ministre des Ressources naturelles a mis sur pied, en mai 2016, un comité ministériel de trois membres, qui a été chargé de solliciter les commentaires du public pour éclairer la décision du gouvernement sur le projet, et en même temps, de donner la possibilité aux personnes et aux groupes intéressés qui n'ont pas obtenu le statut d'intervenant à l'audience de l'Office de donner leur avis. Le comité était chargé de : a) examiner les commentaires du public et d'en tenir compte; b) rencontrer les représentants locaux des parties intéressées pour mobiliser le public et les collectivités touchées le long du tracé du pipeline et de la route de navigation; c) rencontrer les groupes autochtones qui souhaitaient donner leur avis au comité, en soulignant que les travaux du comité compléteraient les consultations de la Couronne, mais ne les rempliraient pas; d) soumettre un rapport au ministre des Ressources naturelles au plus tard le 1<sup>er</sup> novembre 2016.

En juillet et en août 2016, le comité a organisé 44 réunions en Alberta et en Colombie-Britannique, auxquelles ont participé 2 400 personnes; 650 participants ont fait des observations directes au comité. Le comité a également reçu 20 154 commentaires par courriel de particuliers et d'organisations non gouvernementales (ONG), qui étaient majoritairement critiques à l'égard du projet, mentionnant les droits des Premières Nations, le changement

of Natural Resources received a summary report from the Panel on November 1, 2016, that was made public.

On behalf of the Panel, NRCan designed and managed at the same time an online questionnaire and portal to solicit public input on the Project. The portal accepted public input from June 30 to September 30, 2016. A total of 35 258 responses were submitted, and 27 616 people completed the questionnaire. A majority of respondents were in favour of the Project, citing the public interest and economic benefits for Canada. A summary report of the questionnaire was made public.

About 77 per cent of questionnaire participants supported the Project, while 98 per cent of those who sent emails opposed it. However, the majority of participants in the Panel meetings opposed the Project.

In making its decision on the Project, the Government considered the Panel's report and the questions the Panel outlined.

#### Crown consultation

The Crown has a legal duty to consult and, where appropriate, accommodate when the Crown contemplates conduct that might adversely impact potential or established Aboriginal or Treaty rights. The Crown relied on both the NEB review process and its own consultative activities to meet its duty to consult potentially impacted Indigenous groups. Consistent with the approach taken on other major pipeline projects, the consultation process with potentially impacted Indigenous groups was carried out in four phases. The phases are

(a) *Phase I – Early engagement (December 2013–April 2014)*: The Crown communicated project information and the planned Crown consultation process to potentially affected Indigenous groups via correspondence and a series of early engagement meetings;

(b) *Phase II – NEB hearings (April 2014–February 2016)*: Indigenous groups were able to participate in the NEB hearing process as commenters or intervenors in order to have their concerns placed on the hearing record. The Crown used the NEB hearing process, as well as correspondence and meetings with Indigenous groups, to inform itself about the Project and the nature of any adverse impacts on Aboriginal rights and title, to understand Indigenous groups' issues and concerns, and to consider mitigation measures proposed by the proponent and/or recommended by the NEB in the form of terms and conditions (including proponent commitments that may address potential adverse impacts on rights);

climatique, d'autres répercussions environnementales et la transition nécessaire vers l'énergie renouvelable. Le ministre des Ressources naturelles a reçu un rapport sommaire du comité ministériel le 1<sup>er</sup> novembre 2016, rapport qui a été rendu public.

En même temps, au nom du comité, RNCan a conçu et géré un questionnaire en ligne et un portail pour solliciter les commentaires du public sur le projet. Les commentaires du public ont été acceptés sur le portail du 30 juin au 30 septembre 2016. Au total, 35 258 réponses ont été envoyées et 27 616 personnes ont rempli le questionnaire. Une majorité des personnes qui ont répondu au questionnaire étaient favorables au projet, citant l'intérêt public et les retombées économiques pour le Canada. Un rapport sommaire du questionnaire a été publié.

Environ 77 % des répondants au questionnaire étaient pour le projet, alors que 98 % des personnes qui ont envoyé des courriels étaient contre. Toutefois, la majorité des participants aux réunions du comité étaient opposés au projet.

En prenant sa décision sur le projet, le gouvernement a examiné le rapport du comité et les questions qu'il a résumées.

#### Consultation de la Couronne

Selon la loi, la Couronne a une obligation de consulter et, le cas échéant, de trouver des accommodements lorsqu'elle envisage une conduite susceptible d'avoir des effets préjudiciables sur des droits ancestraux des autochtones ou issus de traités, établis ou potentiels. La Couronne s'est appuyée à la fois sur le processus d'examen de l'Office et sur ses propres activités de consultation pour s'acquitter de son obligation de consulter les groupes autochtones susceptibles d'être touchés. Conformément à l'approche adoptée pour d'autres grands projets pipeliniers, le processus de consultation de la Couronne auprès des groupes autochtones susceptibles d'être touchés s'est déroulé en quatre phases, comme suit :

a) *Phase I – Engagement précoce (décembre–avril 2014)* : la Couronne a communiqué aux autochtones susceptibles d'être touchés, par correspondance et dans une série de réunions de consultation précoce, l'information sur le projet et le processus de consultation prévu de la Couronne;

b) *Phase II – Audiences de l'Office (avril 2014–février 2016)* : les groupes autochtones ont pu participer au processus d'audiences de l'Office à titre d'auteurs de commentaires ou d'intervenants, pour que leurs préoccupations soient consignées au dossier d'audience. La Couronne s'est servie du processus d'audience de l'Office, de la correspondance et des réunions avec les groupes autochtones pour s'informer sur le projet et sur tout effet négatif sur les droits ancestraux et les titres autochtones, afin de comprendre les enjeux

(c) *Phase III – Government decision (February 2016–November 2016)*: the Crown engaged in consultation meetings and exchanged correspondence with Indigenous groups in order to identify each Indigenous group's issues and concerns that had not been adequately addressed by the NEB's conditions or by legally binding proponent commitments. The Crown also used these meetings to identify and discuss accommodation proposals and incremental measures being considered by the Government of Canada.

(d) *Phase IV – Regulatory authorizations (if necessary)*: following a GIC decision to approve the Project, implicated departments will consult with Indigenous groups prior to the issuance of any necessary regulatory permits.

To enable deeper consultation with Indigenous peoples, on June 3, 2016, the Governor in Council approved a four-month extension to the legislated timelines for a decision on the Project, moving the final date for a decision to December 19, 2016.

#### Government response to what was heard

##### ***Environment***

###### **a. Risk of spills**

Communities are deeply concerned about the risk and impacts that oil spills pose to their land, air, water and communities. In addition to the terms and conditions related to spills identified by the NEB, land-based oil spills are subject to both federal and provincial jurisdiction. Federally regulated pipelines are subject to NEB regulation and oversight, which requires operators to develop comprehensive emergency management programs and collaborate with local responders in the development of these programs. B.C. also recently implemented regulations under the provincial *Environmental Management Act* to strengthen provincial oversight and require industry and government to collaborate in response to spills in B.C.

The Government recently updated its world-leading pipeline safety regime through the *Pipeline Safety Act*, which

et les préoccupations soulevés par les groupes autochtones et examiner les mesures d'atténuation proposées par le promoteur du projet (ainsi que les engagements que celui-ci a pris pouvant permettre d'aborder des effets négatifs possibles sur les droits) ou recommandées par l'Office sous la forme de conditions;

c) *Phase III – Décision du gouvernement (février 2016–novembre 2016)* : la Couronne a participé à des réunions de consultation et échangé de la correspondance avec les groupes autochtones pour connaître les questions et les préoccupations de chaque groupe autochtone n'ayant pas été suffisamment prises en compte dans les conditions de l'Office ou dans les engagements juridiquement contraignants pris par le promoteur. La Couronne a également utilisé les réunions pour définir et discuter des accommodements proposés et des mesures supplémentaires envisagées par le gouvernement du Canada.

d) *Phase IV – Autorisations réglementaires (s'il y a lieu)* : après la décision du gouverneur en conseil d'approuver le projet, les ministères concernés consulteront les groupes autochtones avant la délivrance de tout permis réglementaire requis.

Pour permettre une consultation plus poussée avec les groupes autochtones, le 3 juin 2016, le gouverneur en conseil a approuvé la prolongation de quatre mois du délai prescrit par la loi pour prendre la décision sur le projet, reportant la date finale au 19 décembre 2016.

##### **Réponse du gouvernement aux commentaires exprimés aux audiences**

##### ***Environnement***

###### **a. Risque lié aux déversements**

Les collectivités sont vivement préoccupées par le risque des déversements et leurs effets sur leurs terres, l'air, l'eau et les communautés locales. En plus des conditions relatives aux déversements énoncées par l'Office, les déversements d'hydrocarbures d'origine terrestre relèvent de la compétence fédérale et de la compétence provinciale. Les pipelines sous réglementation fédérale sont assujettis au dispositif réglementaire et à la surveillance de l'Office, qui impose aux exploitants de mettre en place des programmes de gestion des urgences et de travailler avec les services d'urgence locaux à l'élaboration de ces programmes. La Colombie-Britannique a récemment adopté des règlements en vertu de l'*Environmental Management Act* dans le but de renforcer la surveillance provinciale et d'exiger la collaboration entre l'industrie et le gouvernement aux interventions en cas de déversements dans la province.

Le gouvernement a récemment actualisé son système de sécurité des pipelines de calibre mondial par l'entremise

came into force in June 2016. The Act implements \$1 billion in “absolute liability” for companies operating major crude oil pipelines to clarify that operators will be responsible for all costs associated with spills irrespective of fault up to \$1 billion; operators remain liable on an unlimited basis beyond this amount when they are negligent or at fault. The Act also requires proponents to carry cash on hand to ensure they are in a position to immediately respond to emergencies.

With respect to ship source spills, the Government recently announced \$1.5 billion in new investment in a national Oceans Protection Plan to enhance its world-leading marine safety regime. The Oceans Protection Plan has four main priority areas:

- creating a world-leading marine safety system that improves responsible shipping and protects Canada's waters, including new preventive and response measures;
- restoring and protecting the marine ecosystems and habitats, using new tools and research;
- strengthening partnerships and launching co-management practices with Indigenous communities, including building local emergency response capacity, and
- investing in oil spill cleanup research and methods to ensure that decisions taken in emergencies are evidence-based.

The Plan responds to concerns related to potential marine spills by strengthening the Coast Guard's ability to take command in marine emergencies, toughening requirements for industry response to incidents, and by enhancing Indigenous partnerships.

#### b. Impacts on Southern resident killer whale

In its report, the NEB concluded that the operation of Project-related marine vessels is likely to result in significant adverse effects to the Southern resident killer whale population, which is of unique cultural and spiritual significance to Indigenous groups. As a result, the Board has encouraged other regulatory authorities, such as TC and DFO, to explore initiatives that would aim to reduce the potential effects of marine vessels on marine mammals.

The Government is committed to implementing actions to address multiple cumulative effects to support recovery of the Southern resident killer whale. The proposed Action Plan for Southern resident killer whales sets out the measures to achieve recovery objectives and DFO is working

de la Loi sur la sûreté des pipelines, qui est entrée en vigueur en juin 2016. La Loi prévoit une « responsabilité absolue » de 1 milliard de dollars qui précise que les exploitants devront assumer tous les coûts associés aux déversements, sans égard à la faute, jusqu'à concurrence de 1 milliard de dollars; les exploitants conservent une responsabilité illimitée au-delà de ce montant lorsque la faute leur incombe. La Loi exige aussi que les exploitants disposent des ressources financières nécessaires pour être en mesure de réagir immédiatement aux urgences.

En ce qui concerne les déversements provenant des navires, le gouvernement a récemment annoncé un nouvel investissement de 1,5 milliard de dollars dans le Plan de protection des océans pour renforcer son régime de sécurité maritime de calibre mondial. Ce Plan est axé sur quatre grandes priorités :

- créer un système de sécurité maritime de calibre mondial qui permet d'améliorer la navigation responsable et la protection des eaux canadiennes, notamment au moyen de nouvelles mesures de prévention et d'intervention;
- restaurer et protéger les écosystèmes et les habitats marins à l'aide de recherches et d'outils récents;
- renforcer nos partenariats et mettre en œuvre des pratiques de gestion conjointe avec les communautés autochtones, y compris développer la capacité d'intervention en cas d'urgence des autorités locales;
- investir dans la recherche et les méthodes de nettoyage des déversements d'hydrocarbures afin de veiller à ce que les décisions prises en situation d'urgence soient fondées sur des données probantes.

Le Plan tient compte des préoccupations concernant les déversements éventuels en mer en renforçant la capacité de la Garde côtière de prendre le commandement en cas d'urgences en mer, en durcissant les exigences touchant la réaction de l'industrie aux incidents et en renforçant les partenariats avec les autochtones.

#### b. Effets sur l'épaulard résident du sud

Dans son rapport, l'Office a conclu que l'exploitation des navires liés au projet est susceptible d'entrainer des effets négatifs importants sur la population d'épaulards résidents du sud, une espèce qui a une importance culturelle et spirituelle particulière pour les groupes autochtones. L'Office a donc invité des organismes de réglementation comme TC et le MPO à étudier des initiatives visant à réduire les effets éventuels des navires sur les mammifères marins.

Le gouvernement s'est engagé à mettre en œuvre des mesures permettant de tenir compte des multiples effets cumulatifs du projet afin de soutenir le rétablissement de l'épaulard résident du sud. Le Plan d'action proposé pour cette espèce définit les mesures à prendre pour atteindre

with partners to complete those actions. Trans Mountain committed to a series of actions supporting the recovery of the Southern resident killer whale. For example, as part of its Marine Mammal Protection Program, Trans Mountain has committed to support the objectives and recovery measures identified in the Action Plan for the species.

The recently announced Oceans Protection Plan provides new tools to mitigate potential impacts, including a Coastal Environmental Baseline and Cumulative Effects Program; a whale detection system; a new Coastal Restoration Fund; and an immediate science-based review of the effectiveness of current management and recovery actions under way for the Southern resident killer whale, which will be completed by summer 2017 and seek to identify further areas for immediate improvement in recovery efforts and priorities for new or enhanced action efforts.

The Government will work in partnership with Indigenous groups in implementing actions. Indigenous groups possess unique knowledge of the Southern resident killer whale that needs to be fully integrated into the plan, and the success of the recovery is essential to their culture and way of life.

#### c. Climate change

ECCC assessed the GHG emissions associated with the upstream activities directly related to the Project and released a draft assessment report for public comment on May 19, 2016. ECCC projects that the upstream GHG emissions in Canada resulting from upstream activities associated with the expanded Trans Mountain pipeline could range from 20.3 to 25.7 megatonnes (Mt) of CO<sub>2</sub> equivalent per year. When considering only the additional capacity that the Project is adding to the Trans Mountain pipeline system, upstream emissions could range from 13 to 15 Mt of CO<sub>2</sub> equivalent per year.

The assessment concluded that incremental emissions are unlikely to be expected as oil production is expected to grow by more than the capacity of the expanded line regardless of whether the pipeline is built. The final assessment report has been released and posted on the Canadian Environmental Assessment Agency's document online registry.

Through its Climate Leadership Plan, the Government of Alberta is committing to cap oil sands emissions at 100 Mt of CO<sub>2</sub> per year. This will limit future potential upstream GHG emissions associated with the Project. The Project does not impact the emissions projections that underpin the plan to meet or exceed Canada's 2030 target.

les objectifs de rétablissement, et le MPO collabore avec ses partenaires à la mise en œuvre de ces mesures. Trans Mountain s'est engagé à une série de mesures appuyant le rétablissement de l'épaulard résident du sud. Par exemple, dans le cadre de son Programme sur la protection des mammifères marins, Trans Mountain s'est engagé à appuyer les objectifs et les mesures de rétablissement identifiés dans le plan d'action pour l'espèce.

Le Plan de protection des océans récemment annoncé prévoit de nouveaux outils pour atténuer les effets possibles, dont un Programme de données environnementales de référence et d'étude des effets cumulatifs relatifs aux côtes, un système de détection des baleines, un nouveau Fonds de restauration de l'habitat côtier et un examen immédiat fondé sur des données scientifiques portant sur l'efficacité des mesures de gestion et de rétablissement actuelles concernant cette espèce. L'examen, qui sera achevé à l'été 2017, a pour but de définir d'autres améliorations à apporter immédiatement aux activités de rétablissement ainsi que les nouvelles mesures à prendre en priorité ou à intensifier.

Le gouvernement agira en partenariat avec des groupes autochtones à la mise en œuvre des mesures. Les groupes autochtones possèdent des connaissances uniques sur l'épaulard résident du sud, qui doivent être pleinement intégrées au plan, le succès du rétablissement étant primordial pour leur culture et leur mode de vie.

#### c. Changement climatique

ECCC a évalué les émissions de GES associées aux activités en amont directement attribuables au projet et a publié, le 19 mai 2016, un rapport d'évaluation provisoire destiné à être commenté par le public. ECCC prévoit que les émissions de GES en amont au Canada associées à l'agrandissement du pipeline de Trans Mountain pourraient atteindre entre 20,3 et 25,7 mégatonnes (Mt) de CO<sub>2</sub> éq. par an. En tenant compte uniquement de la capacité supplémentaire ajoutée par le projet au réseau pipelinier de Trans Mountain, les émissions en amont se situeraient entre 13 et 15 Mt de CO<sub>2</sub> éq. par an.

Dans son évaluation, ECCC a conclu qu'on ne devrait pas s'attendre à une augmentation des émissions dans la mesure où l'augmentation de la production de pétrole devrait excéder la capacité de la canalisation agrandie, que le pipeline soit construit ou non. La version définitive du rapport d'évaluation a été publiée et est placée dans le registre en ligne des documents de l'Agence canadienne d'évaluation environnementale.

Dans son Climate Leadership Plan, le gouvernement de l'Alberta s'est engagé à plafonner les émissions de sables bitumineux à 100 Mt de CO<sub>2</sub> par an. Cela limitera les émissions futures possibles de GES en amont attribuables au projet. Le projet n'influe pas sur les projections d'émissions qui sous-tendent le plan qui vise à permettre au Canada d'atteindre la cible de 2030 ou de la dépasser.

**Impacts on Indigenous rights and interests**

**a. Adequacy of consultations**

Near the end of the extended time frame for decision, several Indigenous groups requested further extensions of the legislated time limit in order to undertake further consultations. The Government of Canada considered these requests and decided not to further extend the timelines. After almost two years of consultations and with reference to the consultation record, the Government of Canada determined that consultations had been reasonable both procedurally and substantively, and that there was no reasonable prospect that additional time would alter or enhance the outcome.

To evaluate the adequacy of the consultations, including accommodations, NRCAN assessed each Phase of the process, and evaluated a range of elements including the opportunities for engagement, issues raised, proposed mitigation measures, the Board responses and conditions and other relevant measures. The assessment is reflected in a written report, the Consultation and Accommodation Report (CAR). The CAR documents the Crown's consultation process with 117 Indigenous groups.

Although not every concern raised by Indigenous groups was expressly addressed or accommodated through the process, accommodations were assessed as being reasonable in the circumstances. The Crown's assessment took into account Project modifications, proponent commitments and agreements entered into with Indigenous groups, the Board conditions that would be legally binding in a potential Certificate of Public Convenience and Necessity and British Columbia's Environmental Assessment Office's proposed conditions for a provincial Environmental Assessment certificate. Additionally, it was recognized that other measures would serve to lessen or avoid potential adverse impacts on Indigenous interests including the commitment to establish an Indigenous Advisory and Monitoring Committee, the Action Plan for the Recovery of the Northern and Southern resident killer whale (mandated under the SARA), and the newly announced Oceans Protection Plan.

Taking into account all of the proposed measures including the NEB Conditions and Project-related Crown commitments, the Crown concluded that Indigenous concerns would be reasonably accommodated and that the consultation process for the Project upheld the honour of the Crown.

**b. Environmental and economic interests**

While the Government expects that the enforceable conditions imposed and overseen by the NEB will serve to

**Effets sur les droits et les intérêts des autochtones**

**a. Caractère adéquat des consultations**

Vers la fin du processus de consultation, plusieurs groupes autochtones ont demandé d'autres prolongations du délai réglementaire afin de poursuivre les consultations. Après avoir examiné ces demandes, le gouvernement du Canada a décidé de ne pas prolonger encore le délai. Après presque deux années de consultation et au regard du bilan des consultations, il a jugé qu'elles étaient satisfaisantes, qu'il s'agisse de la procédure ou du fond, et qu'il était peu probable qu'une prolongation modifie ou améliore le résultat des consultations.

Pour évaluer le caractère adéquat des consultations, y compris en ce qui concerne les accommodements, RNCAN a évalué chaque phase du processus, et une série d'éléments, notamment les possibilités de participation, les questions soulevées, les mesures d'atténuation proposées, les réponses de l'Office, les conditions et les autres mesures pertinentes. RNCAN a présenté par écrit son évaluation dans son Rapport sur la consultation et l'accommodement, qui documente le processus de consultation entre la Couronne et 117 groupes autochtones.

Bien que toutes les préoccupations soulevées par les groupes autochtones n'aient pas été explicitement traitées ni fait l'objet d'accompagnements dans le cadre du processus, il a été jugé, dans l'évaluation, que les accommodements étaient raisonnables dans le contexte. L'évaluation de la Couronne a tenu compte des modifications au projet, des engagements pris par le promoteur et des ententes conclues avec les groupes autochtones, des conditions juridiquement contraignantes énoncées par l'Office aux fins de la délivrance éventuelle du certificat d'utilité publique, et des conditions proposées par l'Environmental Assessment Office de la Colombie-Britannique à l'égard d'un certificat provincial d'évaluation environnementale. En outre, il a été reconnu que d'autres mesures serviraient à minimiser ou à éviter les effets négatifs sur les intérêts autochtones, notamment l'engagement à mettre sur pied un Comité consultatif et de suivi autochtone, le Plan d'action pour le rétablissement de l'épaulard résident du sud et du nord (exigé en application de la LEP) et le Plan de protection des océans nouvellement annoncé.

Compte tenu de toutes les mesures proposées, y compris les conditions imposées par l'Office et les engagements pris par la Couronne à l'égard du projet, la Couronne a conclu que les préoccupations des groupes autochtones feraient l'objet d'accompagnements raisonnables et que le processus de consultation relatif au projet a préservé l'honneur de la Couronne.

**b. Intérêts environnementaux et économiques**

Le gouvernement s'attend à ce que les conditions juridiquement contraignantes imposées et surveillées par

address, avoid, and mitigate the majority of potential and known impacts to Aboriginal rights associated with the Trans Mountain Expansion project, the Government is also advancing two new initiatives to respond to environmental and economic interests expressed during consultations, an Indigenous Advisory and Monitoring Committee and an Economic Pathways Partnership.

These measures are designed to address impacts to rights and respond to broader issues raised during consultations — namely, Indigenous communities' role in project governance, oil spill response, and economic benefits.

First, the Government will co-develop an Indigenous Advisory and Monitoring Committee with Indigenous groups along the Trans Mountain pipeline corridor, with the understanding that the Committee would only become operational when a Final Investment Decision is made by the proponent. Co-development of this governance body acknowledges and respects the unique connection and constitutionally protected interests that Indigenous people have over their traditional territories. It will provide a predictable, transparent and accountable forum for Indigenous communities to share information and to advise the NEB over the project life-cycle.

The Committee will be mandated to provide advice to the NEB and other regulators on environmental, safety and socio-economic issues related to the performance of the Project, the broader NEB-regulated pipeline corridor, the marine terminal and marine shipping over the life-cycle of the Trans Mountain Expansion project, with a near-term focus on construction and post-construction phases of the Trans Mountain Expansion pipeline.

The Government also recognizes a majority of potentially impacted Indigenous communities along the pipeline and marine shipping routes have underscored that this project needs to result in socio-economic benefits for their communities. Through NEB conditions 11 and 12, the proponent will be required to include Indigenous Peoples in employment and business opportunities, as well as training and education plans for the Project. The Government will also advance a new Economic Pathways Partnership to complement actions taken by the proponent to support Indigenous groups taking full advantage of these opportunities. In this regard, the Government will mobilize existing federal programs to communities along the Trans Mountain Expansion pipeline in a timely and efficient manner so that these communities have the tools to maximize every opportunity that the Project presents.

l'Office permettront d'aborder, d'éviter ou d'atténuer la majorité des effets potentiels et connus du projet d'agrandissement de Trans Mountain sur les droits des autochtones. Le gouvernement présente également deux nouvelles initiatives dans le but d'apporter une réponse aux préoccupations soulevées en ce qui a trait aux intérêts environnementaux et économiques au cours des consultations : un Comité consultatif et de suivi autochtone et un Partenariat pour l'accès aux retombées économiques.

Ces mesures doivent permettre de traiter les effets sur les droits des autochtones et les questions plus larges soulevées dans les consultations — à savoir le rôle des collectivités autochtones dans la gouvernance des projets, l'intervention en cas de déversement d'hydrocarbures, et les retombées économiques.

Le gouvernement établira en premier lieu, avec les groupes autochtones, un Comité consultatif et de suivi autochtone le long du corridor du pipeline de Trans Mountain, sachant que le Comité ne commencerait à fonctionner qu'au moment où une décision finale d'investissement serait prise par le promoteur. La mise sur pied en commun de cet organe de gouvernance reconnaît et respecte le lien unique qu'ont les autochtones avec leurs terres ancestrales ainsi que leurs intérêts protégés par la Constitution à cet égard. Le Comité sera un cadre prévisible, transparent et responsable dans lequel les collectivités autochtones pourront échanger des informations et aviser l'Office au cours du cycle de vie du projet.

Le Comité sera chargé de fournir des avis à l'Office et à d'autres organismes de réglementation sur les questions d'environnement, de sécurité et les dimensions socioéconomiques en rapport avec le rendement du projet, du corridor du pipeline réglementé par l'Office et sur le terminal maritime et le transport maritime, durant le cycle de vie du projet d'agrandissement du réseau de Trans Mountain, en mettant l'accent à court terme sur les étapes de la construction et les étapes postérieures à la construction.

Le gouvernement reconnaît également qu'une majorité des collectivités autochtones pouvant être touchées le long du tracé du pipeline et des routes de transport maritime ont souligné que ce projet devait produire des retombées économiques pour leurs collectivités. En vertu des conditions 11 et 12 de l'Office, le promoteur devra offrir des possibilités d'emploi et d'affaires aux autochtones et avoir des plans de formation et d'information en rapport avec le projet. Le gouvernement proposera également un nouveau Partenariat pour l'accès aux retombées économiques afin de compléter les mesures prises par le promoteur pour permettre aux groupes autochtones de profiter pleinement de ces possibilités. Dans cette optique, le gouvernement mobilisera rapidement et efficacement les programmes actuels au profit des collectivités établies le long du pipeline de façon à ce qu'elles disposent des outils leur permettant de tirer au mieux parti de chaque débouché offert par le projet.

### **Conclusions**

In making its decision on the Project, the Government has considered, among other things, the NEB's recommendation report, the assessment of upstream GHG emissions, the views of the public gathered through the Panel and an online questionnaire and enhanced consultations with Indigenous Peoples.

In considering this information, the Governor General in Council, on the recommendation of the Minister of Natural Resources:

- (a) pursuant to subsection 31(1) of the *Canadian Environmental Assessment Act, 2012*, and taking into account the terms and conditions identified by the NEB, determines that the Trans Mountain Expansion Project is not likely to cause significant adverse environmental effects, and directs the NEB to issue an environmental assessment decision statement;
- (b) pursuant to subsection 54(1) of the *National Energy Board Act*, directs the NEB to issue Certificate of Public Convenience and Necessity to Trans Mountain for the proposed construction and operation of the Project, subject to the 157 terms and conditions identified by the NEB; and
- (c) pursuant to subsection 21(2) of the *National Energy Board Act*, approves the issuance by the NEB to Trans Mountain Amending Orders AO-002-OC-49 and AO-003-OC-2.

### **Department contact**

For more information, please contact

Terry Hubbard  
Director General  
Petroleum Resources Branch  
Natural Resources Canada  
Telephone: 343-292-6165

### **ORDER AO-002-OC-49**

**IN THE MATTER OF** the *National Energy Board Act* (the NEB Act) and the regulations made thereunder; and

**IN THE MATTER OF** the *Canadian Environmental Assessment Act, 2012*, (CEA Act) and the regulations made thereunder; and

**IN THE MATTER OF** an application pursuant to sections 52, 58 and 21 of the NEB Act and section 44 of the *National Energy Board Onshore Pipeline Regulations* (OPR), dated 16 December 2013, by Trans Mountain Pipeline ULC (Trans Mountain) to construct and operate the

### **Conclusions**

Pour rendre une décision sur le projet, le gouvernement a tenu compte, entre autres, du rapport de recommandations de l'Office, de l'évaluation des émissions de GES en amont, des observations du public recueillies par le comité et à l'aide du questionnaire en ligne et des consultations approfondies avec les groupes autochtones.

Se basant sur cette information, le gouverneur général en conseil, sur la recommandation du ministre des Ressources naturelles :

- a) Conformément au paragraphe 31(1) de la *Loi canadienne sur l'évaluation environnementale (2012)* et compte tenu des conditions énoncées par l'Office, détermine que le projet d'agrandissement du réseau de Trans Mountain n'est pas susceptible d'entraîner des effets environnementaux négatifs importants, et charge l'Office d'émettre une déclaration de décision à l'issue de l'évaluation environnementale;
- b) Conformément au paragraphe 54(1) de la *Loi sur l'Office national de l'énergie*, charge l'Office de délivrer un certificat d'utilité publique à Trans Mountain pour la construction et l'exploitation projetées du projet, sous réserve des 157 conditions énoncées par l'Office;
- c) Conformément au paragraphe 21(2) de la *Loi sur l'Office national de l'énergie*, approuve la délivrance par l'Office à Trans Mountain des ordonnances modificatrices AO-002-OC-49 et AO-003-OC-2.

### **Personne-resource du Ministère**

Pour obtenir d'autres renseignements, veuillez communiquer avec :

Terry Hubbard  
Directeur général  
Direction des ressources pétrolières  
Ressources naturelles Canada  
Téléphone : 343-292-6165

### **ORDONNANCE AO-002-OC-49**

**RELATIVEMENT À** la *Loi sur l'Office national de l'énergie* (la Loi) et à ses règlements d'application;

**RELATIVEMENT À** la *Loi canadienne sur l'évaluation environnementale (2012)* (LCEE) et à ses règlements d'application;

**RELATIVEMENT À** une demande présentée par Trans Mountain Pipeline ULC (Trans Mountain) le 16 décembre 2013 aux termes des articles 52, 58 et 21 de la Loi et de l'article 44 du *Règlement de l'Office national de l'énergie sur les pipelines terrestres* (le Règlement),



Fisheries and Oceans  
Canada  
Pacific Region  
200 – 401 Burrard Street  
Vancouver, British Columbia  
V6C 3S4

Pêches et Océans  
Canada  
Région du Pacifique  
Pièce 200 – 401 rue Burrard  
Vancouver (C.-B.)  
V6C 3S4

April 16, 2018

*Your file*      *Votre référence*  
**File OF-Fac-Oil-T260-2013-03 03**  
*Our file*      *Notre référence*  
**18-HPAC-00246**

Ms. Sheri Young  
Secretary of the Board  
National Energy Board  
Suite 210, 517 Tenth Avenue SW  
Calgary, Alberta T2R 0A8

**Re: Trans Mountain Pipeline ULC (Trans Mountain)  
Trans Mountain Expansion Project (TMEP)  
Potential for a *Species at Risk Act* (SARA) compliant *Fisheries Act*  
Authorization for the Stoney Creek watercourse crossing**

Dear Ms. Young:

On February 21, 2018, the National Energy Board (NEB) advised Fisheries and Oceans Canada (DFO) via a letter (<https://apps.neb-one.gc.ca/REGDOCS/Item/View/3475777>) that the TMEP may require a *Species at Risk Act* (SARA) compliant *Fisheries Act* Authorization for works, undertakings or activities at the proposed Stoney Creek pipeline watercourse crossing (BC-785), in Burnaby, British Columbia.

DFO has completed its review of the proposed works, undertakings or activities referred by the NEB, and has determined that *serious harm to fish* as defined in the *Fisheries Act* is likely to result from the following works, undertakings or activities proposed at the Stoney Creek crossing:

- Installation of an aerial pipeline crossing within a 15 m reserve strip of Stoney Creek designated as riparian critical habitat for the endangered Nooksack dace (listed under Schedule 1 of SARA)

Clearing of riparian critical habitat associated with the proposed aerial pipeline crossing is anticipated to result in the destruction of critical habitat of the endangered Nooksack dace, which is prohibited under subsection 58(1) of SARA. A section 73 SARA permit would thus be required for the construction work conducted in relation to the watercourse crossing.

By virtue of section 74 of SARA, permits or authorizations issued by the Minister of Fisheries and Oceans under other federal legislation, including the *Fisheries Act*, that authorize activities affecting listed aquatic species at risk or any part of their critical

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habitat have the same effect as permits issued under section 73 of SARA if, before they are issued, the Minister is of the opinion that the requirements of subsections 73(2) to 73(6.1) are met and if, after they are issued, the Minister complies with the requirements of subsection 73(7) to review the permit if an emergency order is made (see paragraphs 74(a) and (b) of SARA).

As such, an authorization under paragraph 35(2)(b) of the *Fisheries Act* can authorize works, undertakings or activities resulting in *serious harm* to fish and, to the extent that the authorization allows an activity affecting a listed wildlife species, or any part of its critical habitat, such authorization, by virtue of s. 74 of SARA, has the same effect as a s. 73 SARA permit if the conditions set out in paragraphs 74(a) and (b) mentioned above, are met, which in turn authorizes the prohibited effects on listed aquatic species at risk or its critical habitat. Thus, a SARA-compliant *Fisheries Act* authorization will be required for works, undertakings or activities associated with the aerial pipeline crossing of Stoney Creek resulting in the loss of riparian critical habitat for the Nooksack dace.

Trans Mountain Pipeline ULC is required to submit the following information and documentation to apply for a *Fisheries Act* authorization:

- a completed Application for Authorization under Paragraph 35(2)(b) of the *Fisheries Act* Form (<http://www.dfo-mpo.gc.ca/pnw-ppe/reviews-revues/authorization-autorisation-eng.html>);
- the required information and documentation set out in the *Applications for Authorization under Paragraph 35(2)(b) of the Fisheries Act Regulations* (<http://laws-lois.justice.gc.ca/eng/regulations/SOR-2013-191/page-1.html>);
- an irrevocable letter of credit (for requirements see: <http://www.dfo-mpo.gc.ca/pnw-ppe/reviews-revues/application-eng.html#ab>) to cover the cost of implementing the offsetting plan, as required to be provided under subsection 3(1) of the Regulations; and
- the information identified in the attached document "Information Required For The Consideration Of The Approval Of Activities That Are Otherwise Prohibited Under The Species At Risk Act". This information will be used by DFO to ensure that the requirements under section 73 of the *Species at Risk Act* are met before an authorization can be issued.

If you have any questions with the content of this letter, please contact Alston Bonamis at our Vancouver office at 604-340-3359, or by email at [alston.bonamis@dfo-mpo.gc.ca](mailto:alston.bonamis@dfo-mpo.gc.ca). Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,



Tracey Sandgathe  
Regional Manager  
Fisheries and Oceans Canada

Attachment: Information required for the consideration of the approval of activities that are otherwise prohibited under the *Species at Risk Act*

Cc: Margaret Mears, Environmental Lead, Trans Mountain Pipeline ULC  
Trans Mountain Expansion Project Indigenous Advisory & Monitoring  
Committee (IAMC)

## **Information Required For The Consideration Of The Approval Of Activities That Are Otherwise Prohibited Under The Species At Risk Act**

### **1.0 Purpose**

Section 74 of SARA provides for the use of a *Fisheries Act* authorization to permit activities that affect listed aquatic species at risk.

This document applies when seeking a paragraph 35(2)(b) *Fisheries Act* authorization for works, undertakings and/or activities that may also affect listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is otherwise prohibited under sections 32, 33 and/or subsection 58(1) of the *Species at Risk Act* (SARA).

The information identified in this document is to supplement or further refine the information that must be provided in an application for authorization under paragraph 35(2)(b) of the *Fisheries Act* for works, undertakings or activities that may result in serious harm to fish. The information and documentation that must be submitted with an application for authorization are set out in the Applications for Authorization under Paragraph 35(2)(b) of the Fisheries Act Regulations<sup>1</sup> (the *Fisheries Act* Applications Regulations), supported by the “Applicant’s Guide to Submitting an Application for Authorization under Paragraph 35(2)(b) of the Fisheries Act<sup>2</sup>”.

Fisheries and Oceans Canada (DFO) will use this information to assess if the requirements of section 73 of SARA are met prior to making a decision of whether or not to authorize the activity (ies) under the *Fisheries Act*. If approved, this material will also inform the establishment of the conditions of such an authorization. The decision making process under the *Fisheries Act* will not be concluded until all of the information is provided and the requirements of section 73 of SARA have been met.

### **1.1 Introduction**

The purposes of SARA are to prevent wildlife species from becoming extirpated or extinct, to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity and to manage species of special concern to prevent them from becoming endangered or threatened.

SARA prohibits the killing, harming, harassing, capturing, taking, possessing, collecting, buying, selling or trading of individuals of species listed in Schedule 1 of SARA<sup>3</sup>. The damage or

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<sup>1</sup> <http://laws-lois.justice.gc.ca/PDF/SOR-2013-191.pdf>

<sup>2</sup> <http://www.dfo-mpo.gc.ca/pnw-ppe/reviews-revues/application-eng.html>

<sup>3</sup> Section 32 of SARA

destruction of listed species' residences<sup>4</sup> is also prohibited under SARA. A residence is a dwelling-place, such as a den, nest or other similar area or place, that is occupied or habitually occupied by one or more individuals during all or part of their life cycles, including breeding, rearing, staging, wintering, feeding or hibernating. When a residence is identified for a specific listed aquatic species, it will be described in its recovery strategy. These prohibitions apply to individuals of listed endangered, threatened and extirpated species and their residences wherever they are found in Canada (including private lands and lands under provincial jurisdiction). SARA prohibitions do not apply to species listed as species of special concern.

SARA also prohibits the destruction of any part of critical habitat<sup>5</sup>. Critical habitat is the habitat necessary for the survival or recovery of a species, and is identified in the recovery strategy or action plan produced for that particular species. Recovery strategies and action plans are available at <http://www.registrelep-sararegistry.gc.ca/default.asp?lang=en&n=24F7211B-1>.

If your work, undertaking or activity could result in prohibited effects on aquatic species listed on Schedule 1 of SARA as endangered, threatened, or extirpated, you may require approval under SARA as well as under the *Fisheries Act*. Pursuant to section 74 of SARA, an authorization under paragraph 35(2) (b) of the *Fisheries Act* can be used to authorize works, undertakings or activities that result in serious harm to fish, as well as otherwise prohibited effects on listed aquatic species at risk, provided that certain conditions are met. Among these conditions, the Minister must be of the opinion that the activity is:

- a) scientific research relating to the conservation of the aquatic species and conducted by qualified persons;
- b) an activity that benefits the aquatic species or is required to enhance its chance of survival in the wild; **or**
- c) affecting the aquatic species is incidental to the carrying out of the activity.<sup>6</sup>

Please note that the Minister of Fisheries and Oceans is responsible for the protection of aquatic species at risk wherever they are found, with the exception of areas administered by Parks Canada Agency.

As well, **all three** of the following conditions must be met:

- a) all reasonable alternatives to the activity that would reduce the impact on the species at risk have been considered and the best solution has been adopted;
- b) all feasible measures will be taken to minimize the impact of the activity on the species or its critical habitat or the residences of its individuals; **and**
- c) the activity will not jeopardize the survival or recovery of the species.<sup>7</sup>

It is therefore necessary that information is provided with your application for authorization under paragraph 35(2)(b) of the *Fisheries Act* to allow DFO to determine if these conditions can

<sup>4</sup> Section 33 of SARA

<sup>5</sup> Section 58 of SARA

<sup>6</sup> Subsection 73(2) of SARA

<sup>7</sup> Subsection 73(3) of SARA

be met. To avoid delays, please provide as much information as possible with your application, as described in the following parts.

## 2.0 Additional Information Requirements to Address the SARA conditions

When preparing an application for authorization under paragraph 35(2)(b) of the *Fisheries Act*, a summary, indicating where this additional information on listed aquatic species can be found in the documentation supporting the application, must be provided.

The information must clearly demonstrate how the proposed activity meets the conditions set out in subsections 73(2) and 73(3) of SARA and described in part 1 of this guide. A description of each element of information required is explained in more detail below.

### 2.1 Purpose of the Activity:

**Ss. 73 (2) of SARA:** The agreement may be entered into, or the permit issued, only if the competent minister is of the opinion that

- a) the activity is scientific research relating to the conservation of the species and conducted by qualified persons;
- b) the activity benefits the species or is required to enhance its chance of survival in the wild; or
- c) affecting the species is incidental to the carrying out of the activity.

When describing your proposed work, undertaking or activity, you will need to demonstrate that the purpose of the activity fits into one of these categories. Indicate in your submission which option best describes the purpose of your activity (ies), and explain why the activity (ies) fits that category. In most cases, there will only be one purpose. However, when appropriate, indicate and explain if different purposes apply to different aquatic species at risk. For example, activities benefitting “species at risk A” may incidentally affect “species at risk B”.

- a) *Scientific research relating to the conservation of the species:* This option applies to activities related to a research project conducted by a qualified person that are focussed on obtaining information that will contribute to the survival or recovery of the aquatic species.
- b) *The activity benefits the species or is required to enhance its chance of survival in the wild:* This option applies to works, undertakings or activities that are expected to benefit the aquatic species or those upon which the survival or recovery of the aquatic species depend such as habitat restoration projects. Note that this does not include scientific research, which is part of the category a), described above.

This category does not apply to offsetting measures carried out to counterbalance impacts on fish and fish habitat. Offsetting measures are part of the category below (see (c)) as the impacts to aquatic species at risk are incidental to the carrying out of the development project.

c) *Affecting the species is incidental to the carrying out of the activity:* This category applies when the main purpose of the activity does not specifically target the aquatic species at risk. Examples include:

- any activities occurring in or near water that have the potential to affect a listed aquatic species (e.g., bridge construction, shoreline stabilization work, pipeline installations or repairs);
- hydroelectric, mining, coastal, oil and gas, or other industrial developments;
- any avoidance, mitigation and offsetting measures implemented for the protection and conservation of fish and fish habitat, including aquatic species at risk, their critical habitat and residence, during the carrying out of works, undertakings or activities, such as:
  - fish surveys being done as part of an environmental assessment or a general planning exercise to determine which species are present in a watercourse; dewatering and capture, relocation or salvage of SARA-listed aquatic species; habitat restoration; and
  - offsetting measures to counterbalance impacts on aquatic species at risk.

## 2.2 Conditions Related to Project Design

### 2.2.1 Reasonable Alternatives

**Paragraph 73(3)(a) of SARA:** The agreement may be entered into, or the permit issued, only if the competent minister is of the opinion that

(a) all reasonable alternatives to the activity that would reduce the impact on the species have been considered and the best solution has been adopted.

Ensure that the information provided demonstrates that all reasonable alternatives to the activity that would reduce the impact on the listed aquatic species at risk have been considered and the best solution has been adopted. Provide a description of all alternatives to the proposed activity (ies) that were considered to avoid or reduce the impact on aquatic species at risk, such as:

- other locations that have been considered that are outside of the aquatic species' range or critical habitat;
- alternative timelines to avoid sensitive life processes;
- other techniques, designs, equipment or processes that could achieve the same outcomes.

Explain why the current proposal was chosen as the best alternative relative to the survival or recovery of the aquatic species at risk, including any selection criteria that were used, and how the selection criteria were applied.

### 2.2.2 Implementation of Feasible Measures to Minimize the Impacts

**Paragraph 73(3)(b) of SARA:** The agreement may be entered into, or the permit issued, only if the competent minister is of the opinion that

(b) all feasible measures will be taken to minimize the impact of the activity on the species or its critical habitat or the residences of its individuals.

Demonstrate that all feasible measures have been taken to minimize the impact of the activity on the aquatic species or its critical habitat or the residences of its individuals. Please provide:

- a description of the mitigation measures and standards that will be implemented (note that this may form the basis of conditions included in the authorization);
- an analysis of the effectiveness of the measures and standards to mitigate impacts to aquatic species at risk, including the expected outcome (i.e., qualitative characterization and quantitative metrics illustrating the reduction of impacts to aquatic species at risk, such as how impacts to aquatic species at risk are reduced by the proposed measures and standards); and
- an identification of any reductions in impacts to aquatic species at risk and when this will be achieved.

### 2.2.3 Jeopardy

**Paragraph 73(3)(c) of SARA:** The agreement may be entered into, or the permit issued, only if the competent minister is of the opinion that

- (c) the activity will not jeopardize the survival or recovery of the species.

To demonstrate that the impacts of the activity will not jeopardize the survival or recovery of the species, the effects on the species must be clearly described. When providing the description of the likely effects of the proposed work, undertaking or activity on fish and fish habitat (see Schedule 1 Subsection 8(1) of the *Fisheries Act Applications Regulations*), also specify the following:

#### *Effects on Individuals of SARA-listed aquatic species*

- State which SARA-listed aquatic species at risk are likely to be affected (e.g., harmed, harassed, captured, taken, possessed or killed) and the life stages potentially affected. Include common and scientific names and their status under SARA.
- Specify the nature of the effect (e.g., mortality, non-lethal bodily injury, stress), and its magnitude (i.e., the intensity or severity of the effect including an estimate of the number of individuals by species likely to be affected, or qualitative effects, e.g., low, medium, high). Indicate the probability or likelihood of the effect occurring.
- For non-lethal effects, indicate their duration (e.g., duration of delay to migration of the species in hours, days, months or years).

#### *Effects on Residences of SARA-listed aquatic species*

- If any of the aquatic SARA-listed species potentially affected has a residence(s) (e.g., spawning redd) in the area that will be affected by the activity, undertaking or work, specify the number of residences for each species found at that location , and estimate the number of residences that may be damaged or destroyed. Note that the description of residence of aquatic species at risk can be found in the Recovery Strategy or the Action Plan of the species. Describe how the impacts on residence could affect the overall population of the species.

### *Effects on Critical habitat*

- Of the fish habitat potentially affected by the activity, specify if any of this habitat is identified as critical habitat for a listed aquatic species at risk. If so, provide a description of the particular characteristics of the habitat that specifically support the aquatic species at risk directly or indirectly in carrying out their life processes. (Note: critical habitat is identified in the Recovery Strategy or Action Plan of the species.)
- Provide a description of the type of habitat and an estimate of the extent (e.g., m<sup>2</sup>) of habitat that will be affected. Indicate the probability or likelihood, the magnitude (i.e., intensity or severity) and the duration of the effect. Make reference to the functions, features and attributes referenced in the description of critical habitat provided in the Recovery Strategy or Action Plan for that species.
- Describe how the effects of the activity on the functions, features and attributes of critical habitat could, in turn, affect the overall population of the species and indicate the implications for recovery (e.g., increased noise levels interfere with marine mammal mating calls reducing the likelihood of successful reproduction that could result in a decline in the population growth).

### *Summary of Impacts*

The information listed above could be provided in the following table format using the following headings:

<b>Activity</b>	<b>Change</b>	<b>Effect</b>	<b>Significance on the species</b>
<i>Dredging</i>	reduction in aquatic vegetation	reduction in vegetation cover leading to increased likelihood of predation upon the young-of-the-year of a listed species	reduction in the age class and slower recovery of the population
<i>Marine seismic surveys</i>	increased noise in the acoustic environment	listed (or not) marine mammals avoid the area	marine mammals must use lower quality habitat for life processes thereby reducing fitness and recovery potential
<i>Infill related to construction works</i>	loss of 50m <sup>2</sup> of critical habitat – feeding and nursery function	less habitat is available for use by young of the year for feeding and avoiding predation	reduction in habitat may reduce the chances of young reaching adulthood and slow the recovery of the species

- Describe how all the above information was derived, including the estimation methodologies used. Where relevant, make reference to the species' Recovery Strategy, Action Plan, Recovery Potential Assessment, and Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status report.

### *Offsetting*

- Offsetting plans are required as part of an application for a *Fisheries Act* authorization. When there are <sup>8</sup>residual effects (i.e. effects after mitigation) on aquatic species at risk, the offsetting measures must counterbalance effects such as the killing of individuals of aquatic species at risk, the destruction of their critical habitat, and/or the damage or destruction of the residence of their individuals. To achieve this, the selection of offsetting measures should focus on concrete actions aimed at meeting the population and distribution objectives of the species as described in its recovery strategy, action plans and/or management plans. DFO will consider the proposed offsetting plan when determining if the anticipated effects of the activity could jeopardize the survival or recovery of the species. For more information on offsetting for species at risk, please consult the principles in the Annex of the *Species at Risk Act Permitting Policy* entitled "Guidelines for the use of Biodiversity Offsets as part of an Application for a Species at Risk Act Section 73 Permit".

All components of the offsetting plan must include specific information on the aquatic species at risk for which there are offsetting measures as set out in Section 13 of Schedule 1 of the *Fisheries Act Applications Regulations*.

### *Jeopardy to Survival or Recovery of the Species*

- Taking the above into account, please explain why you believe the proposed work, undertaking or activity will not jeopardize survival or recovery of the aquatic species at risk.

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<sup>8</sup> "Residual effects" mean the impacts that cannot be avoided or mitigated.

## ACTIVE CONTAMINATED FISHERIES PROHIBITION ORDERS

Order No.	Signed	Replaces	Species	Closes Area
PSN-2018-WWT-1	Apr 17/18	N/A	All BM	Area 18, closure Map 18 ff, North Pender Island
PTN-2016-24	Jan. 22/16	PTN-2015-633	All BM	Area 3
PSN-2016-44	Feb. 2/16	PSN-2014-171	All BM	Area 7, amended legal description 7.3, 7.8, 7.15
PSN-2016-149	Mar. 29/16	PSN-2015-258	All BM	Area 27 - lift closure 27.10 Clesklagh Creek
PTN-2016-199	Apr. 22/16	PTN-2016-128	All BM	Area 27
PSN-2016-225	May 2/16	PSN-2016-43	All BM	Area 2, new closure 2.8
PSN-2016-235	May 4/16	PSN-2014-467	All BM	Area 13, update closure 13.14 from NAD 27 to NAD 83
PCH-2016-252	May 10/16	N/A	All Fish	SA 19-2 (Diesel spill)
PSN-2016-304	June 22/16	PSN-2015-261	All BM	Area 12 - updated description for 12.5
PSN-2016-516	Oct 13/16	PSN-2014-179	All BM	Area 3, roll-over and correction to 3.5
PSN-2016-509	Nov. 29/16	N/A	All BM	Area 10, New closure 10.1 Margaret Bay
PTN-2016-616	Nov. 29/16	PTN-2016-590	All BM	Area 10
PTN-2016-618	Nov. 29/16	PTN-2016-588	All BM	Area 9
PTN-2017-42	Jan. 24/17	PTN-2017-32	All BM	Area 8
PTN-2017-73	Feb. 15/17	PTN-2017-54	All BM	Area 7
PCH-2017-110	Mar. 10/17	N/A	All BM	Emergency Closure 12.ij Port Harvey - chemical spill (portion of Area 12) (approved electronically by RR)
PSN-2017-446	Nov. 15/17	PSN-2016-606	All BM	Area 14, remove 14.4
PSN-2017-449	Nov. 15/17	PSN-2016-404	All BM	Area 15, amend 15.9 Sturt bay and Vananada Cove
PSN-2017-451	Nov. 15/17	PSN-2014-472	All BM	Area 4, remove 4.4
PSN-2017-452	Nov. 15/17	N/A	All BM	Area 14, new closure 14.32 Pt Fanny Bay, Baynes Sound 1
PSN-2017-454	Nov. 15/17	N/A	All BM	Area 16, new closure 16.50 Anderson Bay, Lasqueti Island
PSN-2017-455	Nov. 15/17	N/A	All BM	Area 25, new closure 25.36 Pt of Eliza Island
PSN-2017-456	Nov. 15/17	N/A	All BM	Area 25, new closure 25.37 NE Eliza Inlet 1
PSN-2017-457	Nov. 15/17	N/A	All BM	Area 25, new closure 25.38 NE Eliza Inlet 1
PSN-2017-459	Nov. 15/17	N/A	All BM	Area 25, new closure 25.40 SW Epionosa Inlet
PSN-2017-460	Nov. 15/17	N/A	All BM	Area 25, new closure 25.41 SW Heacate Channel
PSN-2017-461	Nov. 15/17	N/A	All BM	Area 25, new closure 25.42 West Side Head Bay
PSN-2017-462	Nov. 15/17	N/A	All BM	Area 25, new closure 25.43 Head of Tahsis inlet
PSN-2017-479	Nov. 23/17	PSN-2017-453	All BM	Area 14, amend closure 14.33 Pt Fanny Bay, Baynes Sound 2
PSN-2017-480	Nov. 23/17	PSN-2017-458	All BM	Area 25, amend closure 25.39 NW Esperanza Inlet
PSN-2018-16	Jan. 9/18	PSN-2017-450	All BM	Area 16, remove 16.12, 16.16 & 16.26

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PSN-2018-17	Jan. 9/18	PSN-2016-611	All BM	Area 23, remove 23.4
PSN-2018-18	Jan. 9/18	PSN-2017-282	All BM	Area 25, remove 25.2
PTN-2018-49	Jan. 24/18	PTN-2017-423	All BM	Areas 101 to 110, 130 and 142
PTN-2018-98	Feb. 26/18	PTN-2018-50	All BM	Area 5
PTN-2018-99	Feb. 26/18	PTN-2018-90	All BM	Area 6
PTN2018-119	Mar. 9/18	PTN-2018-84	All BM except Butter, Littleneck, Manila, mussels, oysters, varnish, scallops,	SA 14-15
PSN-2018-159	Apr. 6/18	n/a	Oysters	SA 14-8 - Emergency Closure Area 14.xx – Aquaculture Lease Land File # 1411206. Deep Bay, Baynes Sound
PSN-2018-174	Apr. 13/18	n/a	Oysters	14-8 Emergency Closure Area 14.xx – Aquaculture Lease Land File # 278757 Fanny Bay and Ships Point, Baynes Sound
PSN-2018-175	Apr. 17/18	n/a	All BM	Emergency closure Area 18 ff Ganges Harbour WWTP raw overflow
PSN-2018-225	May 25/18	PSN-2016-F-394	All BM	Floathomes, Remove closure #16.47
PSN-2018-226	May 25/18	PSN-2017-447	All BM	Area 26, Remove closure #26.20
PSN-2018-233	May 29/18	n/a	All BM	Amendment to closure 18.35
PSN-2018-234	May 29/18	n/a	All BM	amendment to closure 26.20
PTN-2018-301	June 29/18	PTN-2018-288	All BM except Manila, littleneck, oysters and mussels and scallops	14-5
PTN-2018-320	July 16/18	N/A	All BM except Manila, littleneck, oysters, mussels and scallops	SA 13-1
PSN-2018-330	July 24/18	N/A	All B.M.	Emergency closure 14.ac French Creek WWTP Temp Bypass (Ptn SA 14-1 to 14-4)
PSN-2018-364	Aug. 16/18	PSN-2012-372	All BM	Emergency closure 14.ij Komas Bluff - roll over
PSN-2018-365	Aug. 16/18	PSN-2014-101	All BM	Area 1 (1.1 to 1.5) - roll over
PCH-2018-366	Aug. 16/18	PCH-2014-170	All BM	Area 6 (pin SA 6-1) - roll over
PSN-2018-367	Aug. 16/18	PSN-2014-172	All BM	Area 6 (6.1 to 6.3 & 6.5) - roll over
PSN-2018-369	Aug. 16/18	PSN-2014-174	All BM	Area 5 (5.1) - roll over
PSN-2018-370	Aug. 16/18	PSN-2014-175	All BM	Area 8 (8.1) - roll over
PSN-2018-371	Aug. 16/18	PSN-2014-182	All BM	Area 28 (28.1 to 28.10) - roll over
PTN-2018-372	Aug. 16/18	PTN-2014-516	All BM	Area 28 (All Area 28) - roll over
PSN-2018-373	Aug. 16/18	PSN-2014-473	All BM	Area 29 (29.1 to 29.10) - roll over
PSN-2018-374	Aug. 16/18	PSN-2015-260	All BM	Area 101 - roll over
PSN-2018-375	Aug. 16/18	PSN-2015-649	All BM	Area 19 (19.1 to 19.13) - roll over
PSN-2018-376	Aug. 16/18	PSN-2015-651	All BM	Area 24 (24.1, 24.4, 24.7, 24.10, 24.11 and 24.14) - roll over
PSN-2018-377	May 21/14	PSN-2014-177	All BM	Aquaculture, floathome baseline - roll over
PSN-2018-378	Aug. 23/18	N/A	All BM	Area 28 (Closure 28.11) Came into effect Spring 2016, not actioned
PSN-2018-379	Aug. 23/18	N/A	All BM	Area 14 (Closure 14.2) Pre 1997 closure, added in 2008, not on any current order
PSN-2018-380	Aug. 23/18	N/A	All BM	Area 19 (Closure 19.4) Was approved in Fall 2015 was missed in PO
PSN-2018-381	Aug. 23/18	PSN-2016-610	All BM	Area 20 - Remove closure 20.4, which will be in its own order

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PSN-2018-382	Aug 23/18	N/A	All BM	Area 20 (Closure 20-4) admin correction for description
PTN-2018-383	Aug 24/18	N/A	All BM	Area 21
PTN-2018-384	Aug 24/18	N/A	All BM	Area 22
PTN-2018-385	Aug 24/18	N/A	All BM	Area 121
PTN-2018-386	Aug 24/18	N/A	All BM	Area 123
PTN-2018-387	Aug 24/18	N/A	All BM	Area 125
PTN-2018-388	Aug 24/18	N/A	All BM	Area 126
PTN-2018-389	Aug 24/18	N/A	All BM	Area 111
PTN-2018-390	Aug 24/18	N/A	All BM	Area 127
PTN-2018-391	Aug 24/18	N/A	All BM	Area 124
PTN-2018-412	Aug 29/18	n/a	All BM except Manila, littleneck, oysters and mussels, Varnish Clam and scallops	SA 14-8
PSN-2018-421	Aug 31/18	n/a	All BM	Area 25, new closure 25-26.
PTN-2018-437	Sep 7/18	PTN-2018-424	All BM except Butter, Littleneck, Manila, mussels, oysters	SA 14-11
PTN-2018-438	Sep 13/18	PTN-2018-434	All BM	Area 15 except SA 15-1 to 15-5 (including 15-5.A)
PTN-2018-439	Sep 13/18	n/a	All BM except Blue Mussel, California mussel	Area 15-5.A
PSN-2018-511	Nov. 16/18	n/a	All BM	Area 14 - new closure 14.34 Qualicum Bay to Deep Bay
PSN-2018-512	Nov. 16/18	n/a	All BM	Area 15 - new closure 15.31 Trevener Bay
PSN-2018-513	Nov. 16/18	n/a	All BM	Area 16 - new closure 16.51 Holman Sound
PSN-2018-514	Nov. 16/18	n/a	All BM	Area 17 - amendment to 17.9 False Narrows
PSN-2018-515	Nov. 16/18	n/a	All BM	Area 17 - new closure 17.45 Ladysmith Harbour
PSN-2018-516	Nov. 16/18	n/a	All BM	Area 18 - amendment to 18-10 Mayne Island
PSN-2018-517	Nov. 16/18	n/a	All BM	Area 18 - new closure 18.36 Tumbo Island
PSN-2018-518	Nov. 16/18	n/a	All BM	Area 23 - Amend and reinstate closure 23.8 South Roquefeul Bay
PSN-2018-519	Nov. 16/18	n/a	All BM	Area 23 - new closure 23.31 Uchucklesit Inlet (head)
PSN-2018-520	Nov. 16/18	n/a	All BM	Area 23 - new closure 23.32 Uchucklesit Inlet (east)
PSN-2018-521	Nov. 16/18	PSN-2016-222	All BM	Area 17 - remove closure 17.9 (now standalone PO) and roll over
PSN-2018-522	Nov. 16/18	PSN-2016-607	All BM	Area 18 - remove closure 18.10 (now standalone PO) and roll over
PSN-2018-523	Nov 20/18	n/a	All BM	Area 4 - new closure 4-6
PTN-2018-527	Nov. 21/18	n/a	ALL BM except geoduck and horse clams	SA 24-6b
PSN-2018-542	Nov. 29/18	N/A	All B.M.	Sanitary closure 29-aa
PTN-2018-553	Dec 5/18	n/a	All BM except scallops	SA 13-8 & 13-9
PTN-2018-554	Dec 5/18	PTN-2018-539	All BM except Manila, littleneck, oysters and mussels, scallops	SA 15-5 b, 15-5.C
PTN-2018-563	Dec 6/18	PTN-2018-546	All B.M.	Area 25 except SA 25-1 to 25-8, 25-11, 25-12, 25-15 & 25-16

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PTN-2018-564	Dec 6/18	PTN-2018-547	All BM except Manila, littleneck, oysters and mussels	SA 25-1 to 25-8, 25-11, 25-12, 25-15 & 25-16
PTN-2018-573	Dec. 12/18	PTN-2018-565	All BM	Area 13 except SA 13-1, 13-8, 13-9 and 13-12 to 13-17
PTN-2018-574	Dec. 12/18	PTN-2018-566	All BM except Manila, littleneck, oysters and mussels	SA 13-12 to 13-17
PTN-2018-609	Dec. 28/18	PTN-2018-595	All BM	Area 29 except SA 29-1, 29-2
PTN-2018-610	Dec. 28/18	n/a	All BM except geoduck and horse clams	SA 29-1, 29-2
PTN-2018-611	Dec. 31/18	PTN-2018-598	All BM	Area 2 except SA 2-14, 2-17 to 2-19 and 2-31B
PTN-2018-611A	Dec. 31/18	PTN-2018-599	All BM except geoduck and horse clams	SA 2-14, 2-17 to 2-19 and 2-31B
PTN-2018-616	Dec. 31/18	PTN-2018-591	All BM except Butter Clam and Cockles	SA 12-6, 12-16, 12-17, 12-22, 12-23, 12-26, 12-39B
PTN-2019-27	Jan 9/19	PTN-2019-18	All BM	Area 14 except SA 14-1 to 14-5, 14-7 to 14-11, 14-13 & 14-14
PTN-2019-42	Jan 14/19	n/a	All BM except scallops	SA 4B
PTN-2019-52	Jan 24/19	n/a	All BM except Manila, littleneck, oysters, mussels, scallops, geoducks and horse clams	SA 23-10
PTN-2019-54	Jan 25/19	n/a	All BM except Manila, littleneck, oysters, mussels, scallops, geoducks and horse clams	SA 14-5
PTN-2019-56	Jan 25/19	n/a	All BM except razor clams	SA 1-5
PTN-2019-60	Jan 29/19	PTN-2019-57	All BM	Area 23 except SA 23-3 to 23-6, 23-9 to 23-11
PTN-2019-61	Jan 29/19	PTN-2019-53	All BM except Manila, littleneck, oysters and mussels	SA 23-3 to 23-6, 23-9, 23-11
PTN-2019-66	Feb 1/19	PTN-2018-612	All BM except Manila, littleneck, oysters and mussels	SA 15-1 to 15-3
PTN-2019-67	Feb 1/19	n/a	All BM except Manila, littleneck, oysters and mussels	SA 15-4
PTN-2019-68	Feb 1/19	PTN-2019-10	All BM	Area 24 except SA 24-4, 24-6b, 24-9, 24-13 & 24-14
PTN-2019-70	Feb 1/19	PTN-2019-58	All BM	Area 26, except SA 26-3, 26-6
PTN-2019-71	Feb 1/19	PTN-2019-59	All BM except Manila, littleneck, oysters and mussels	SA 26-3, 26-6
PTN-2019-72	Feb. 8/19	PTN-2019-55	All BM	Area 1
PTN-2019-82	Feb 15/19	PTN-2018-485	All B.M.	Area 19, except SA 19-7 to 19-12
PTN-2019-83	Feb 15/19	PTN-2018-486	All BM except Manila, littleneck, oysters and mussels	SA 19-7 to 19-12
PTN-2019-88	Feb 19/19	PTN-2019-75	All BM	Area 11, except SA 11-12
PTN-2019-90	Feb 19/19	n/a	All BM except Manila, littleneck, oysters and mussels	SA 11-2
PTN-2019-91	Feb 21/19	PTN-2019-84	All BM	Area 20, except 20-1 to 20-3, 20-5 to 20-7
PTN-2019-92	Feb 21/19	n/a	All BM except mussels	SA 20-1- to 20-3
PTN-2019-93	Feb 21/19	n/a	All BM except Manila, littleneck, oysters and mussels	SA 20-5 to 20-7
PTN-2019-94	Feb 21/19	PTN-2019-37	All BM except Manila, littleneck, oysters and mussels	SA 18-2, 18-3
PTN-2019-95	Feb 21/19	n/a	All BM except Manila, littleneck, oysters and mussels, geoduck and horse clams	SA 18-7
PTN-2019-97	Feb 21/19	PTN-2019-81	All BM except geoduck and horse clams	SA 16-1, 16-2, 16-17, 16-22
PTN-2019-98	Feb 22/19	PTN-2019-73	All BM except Manila, littleneck, oysters and mussels	SA 14-1, 14-2, 14-3, 14-4, 14-7, 14-9, 14-10, 14-13, 14-14,
PTN-2019-99	Feb 22/19	PTN-2019-36	All BM	Area 18 except SA 18-2, 18-3, 18-7

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PTN-2019-102	Feb 27/19	PTN-2019-100	All BM	Area 2, except SA 2-11
PTN-2019-103	Feb 27/19	PTN-2018-615	All BM	Area 12 except SA 12-6, 12-11, 12-16, 12-17, 12-22, 12-23, 12-26, 12-39, B
PTN-2019-104	Feb 27/19	n/a	ALL BM except geoduck and horse clams	SA 12-11
PTN-2019-105	Feb 27/19	PTN-2019-31	All BM except Butter, Littleneck, Manila, mussels, oysters	SA 17-5
PTN-2019-106	Feb 27/19	n/a	All BM except Butter, Littleneck, Manila, mussels, oysters, geoduck and horse clams	SA 17-16
PTN-2019-108	Feb 27/19	n/a	All BM except Manila, littleneck, oysters and mussels, geoduck and horse clams	SA 17-10
PCN-2019-109	Feb 27/19	PCN-2018-368	Crab	Admin correction for species and description - Area 4 - closure 4.11
PTN-2019-110	Feb 28/19	PTN-2019-41	All BM	Area 4 except SA 4-1 & 4-9B
PTN-2019-111	Feb 28/19	n/a	ALL BM except geoduck and horse clams	SA 4-1
PTN-2019-112	Feb 28/19	PTN-2019-96	All BM	Area 16 except SA 16-1, 16-2, 16-5 to 16-7, 16-11, 16-12, 16-16, 16-17, 16-19 to 16-22
PTN-2019-113	Feb 28/19	PTN-2019-63	All BM except Manila, littleneck, oysters and mussels	SA 16-5 to 16-7, 16-11, 16-12, 16-16, 16-19 to 16-21
PTN-2019-114	Mar 6/19	PTN-2019-69	All BM except manila, littleneck, oysters and mussels	SA 24-4, 24-6b, 24-13 & 24-14
PTN-2019-115	Mar 6/19	n/a	All BM except Manila, littleneck, oysters and mussels, geoduck and horse clams	SA 24-9
PTN-2019-116	Mar 6/19	PTN-2019-85	All BM	Area 17 except SA 17-2 to 17-13, 17-14, 17-16, to 17-21
PTN-2019-117	Mar 6/19	PTN-2019-107	All BM except Manila, littleneck, oysters and mussels	SA 17-2 to 17-13, 17-14, 17-16, to 17-21